UNIVERSITY OF BIRMINGHAM

A decision support tool for road safety management in Cyprus

by

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A thesis submitted to the
University of Birmingham
for the degree of
Master of Philosophy

School of Civil Engineering
College of Engineering and Physical Sciences
University of Birmingham
October 2011

Abstract

This Thesis describes the methods used to develop a systematic approach to road safety management that may be used by public sector authorities concerned with planning purposes, using Cyprus as a case study.

This was carried out by developing a road safety model, based on iRAP's Road Safety Toolkit, which was first tested using simulated data and eventually on two hazardous road networks in Cyprus.

The model developed consists of five parts:

Part A, where a selection amongst various road safety measures for the needs of the road network may be chosen.

Part B, allows the crash and casualty costs an area characteristics of the road network to be specified. This part also enables the user to price each chosen road safety measure so that Parts C and D can automatically provide crash and casualty economic assessment results

Part E provides the future effectiveness of the measures, according to predicted road crash and casualty data.

The research showed that the model produced is effective and easy to use by road safety practitioners and if it is applied in a systematic manner it can be adapted to meet the local conditions in any country.

Dedication

Στην οικογένεια και στους φίλους μου.

Το γνωρίζω ότι κανένας σας δεν θα διαβάσει πέραν αυτής της σελίδας

Απλά σας ευχαριστώ που είστε πάντα δίπλα μου.

Acknowledgements

I would first of all like to thank my supervisor Dr. Charis Evdorides, for giving me the opportunity to carry out this Thesis and for being a great supervisor. Thank you for all your patience, help, support and guidance throughout the process. I would also like to thank Dr. Michael Burrow, for all the advice and encouragement.

Furthermore, I would like to thank:

Mr. Georgios Morfakis, head of the road safety department of the Ministry of Communications and Works, who has been kind enough to meet me twice and provide me data about the current state of road safety in Cyprus and the road safety measures being applied in the country.

Mr. Menelaos Menalaou, head of road statistics department of the Police in Cyprus, who has also been kind enough to meet me twice, especially in Christmas period, and has provided me the crash statistics data used in this Thesis, as well as information on the work undertaken by the Police department in Cyprus.

Mr Charis Christodoulou who got me in contact with Mr Georgios Morfakis.

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Abbreviations

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
BCR	Benefit-Cost Ratio
DALYs	Disability- Adjusted Life Years
FYRR	First Year Rate of Return
GDP	Gross Domestic Product
GNP	Gross National Product
IRF	International Road Federation
IRR	Internal Rate of Return
ITS	Intelligent Transport System
KSI	Killed and seriously injured
NCHRP	National Cooperative Highway Research Programme
No.	Number
NPV	Net Present Value
NRSC	National Road Safety Council
PTW	Power Two Wheeler
PVB	Present Value Benefit
PVC	Present Value Cost
RAP	Road Assessment Programme
AusRAP	Australian Road Assessment Programme
EuroRAP	European Road Assessment Programme
iRAP	International Road Assessment Programme
kiwiRAP	New Zealand Road Assessment Programme
usRAP	United States Road Assessment Programme
RIA	Road safety impact assessment
RPS	Road Protection Score
RSA	Road Safety Audit
RSI	Road Safety Inspection
WHO	World Health Organisation
kph	Kilometres per hour

Chapter 1:

Introduction

1 INTRODUCTION

Causing an estimated 1.27million deaths and 50million injuries every year, road crashes are the ninth highest cause of death worldwide **(WHO, 2009)**. To address this, numerous countries, organisations and transport authorities are implementing various road safety measures. Amongst them, the European Union (EU) has issued a directive, in July 2010, asking all member countries to work towards decreasing their road fatalities as well as the number of crash injuries by 50%, by 2020 **(ECRS, 2010)**. This directive follows the 3rd road safety action programme of 2001-2010 that also required, its member countries to halve the number of crashes by 2010 **(Council of the European Union, 2010a)**. This target was not achieved, although, road crashes in the EU decreased by 35% in 2009 **(Council of the European Union, 2010b).**

Cyprus, an EU member since 2004, had in 2010 had the eighth lowest number of road crash decrease in road fatalities per capita in the EU **(ETSC, 2011)**. Although road fatalities in Cyprus had decreased by 39% between 2001-2010 **(Papageorgiou, 2011)**, it still remains the ninth highest cause of death, and Cyprus has still a lot to achieve in order to meet the EU 2020 directive **(ECHI, 2011)**. In 2009 ten National Road Safety Council concerns were identified by the head of the road safety department of the Ministry of Communications and Works **(Morfakis, 2009)**. Six out of ten, concerned the management processes. To address this, the research herein seeks to propose a systematic approach and associated planning tools for road safety management to be used by public sector authorities in Cyprus. Despite the focus on Cyprus, the research methodology is generic and may be transferred to any other environment with similar characteristics.

1.1 Background

Road safety management seeks to maintain and improve the existing safety of a road network by reducing crashes and providing a safe road environment for its users to enable its continued use in an effective and safe manner **(Robinson, 2008)**. It concerns the implementation of road safety policies, management and organisation in the authorities responsible for the reduction of road crashes and fatalities **(GRSP, 2006)**.

Many theories have been used to provide a theoretical framework for road safety varying from those that believe that road crashes have no cause in the 1900s **(Haight, 1980),** to the accident proneness theory which, based on psychological tests, suggested that some people were more prone to be involved in crashes than others **(Greenwood and Yule, 1920)**; theories have progressed to the current system theory and behavioural theory. System theory believes that crashes are results of maladjustments in the interaction between components of complex systems, which means that more than one component exists for road crashes to occur and none of them is more crucial than the others **(Elvik et al, 2010).** The behavioural theory states that human risk assessment and acceptance are important when dealing with road crashes **(Wilde, 1980).**

These theories, considered together with the growth of vehicle numbers throughout the years, has resulted in road safety becoming a multi-disciplinary activity**,** which takes place in a multi-sectorial context that needs careful management **(ERSO, 2007)**. It is evident therefore that the road safety problem may be improved to a great extent when the various sectors can collaborate to tackle the problem **(TRL, 2002)**. The World health organisation, 2009, suggests that in practise, this can be partly achieved by the creation of a National Road Safety Council (NRSC), a permanent body which defines a country's path in terms of road safety needs and coordinates the actions between the main organisations that are involved at national level, in other words manage road safety. These organisations may be governmental, such as the transportation authorities, public health services and police, or be private such as insurance companies **(PIARC, 2003)**. Often, the communication between these bodies is not ideal and this leads to poor management problems. To address this the development of road safety strategies and plans are crucial elements in road safety management and are the focus of this thesis **(GRSP, 2006).**

Cyprus, created its National Road Safety Council (NRSC) in 1986 **(Morfakis, 2009)** and between 2012-2020 it aims to develop a Road Safety Strategic Plan. In the past five years (2006-2011), the researches carried out in the country involved the psychological and behavioural aspects of the road user, which lead to road crashes **(MCW, 2009).** Little or no research concerning the road safety management of the country was carried out and to address this, it was felt appropriate to develop a systematic approach to road safety management that can be used by the public sector authorities involved in planning. This research will aim to assist with the management processes related to road safety in Cyprus.

Numerous road safety organisations aim to assist the different countries around the world to reduce the number of road crashes by applying various protocols and models. An example is the Global Road Safety Partnership (GRSP) an organisation that works together with the private and public sectors to address road safety matters of low and middle-income countries. In this research, methodologies and models from different organisations and road authorities will be considered to develop the road safety management approach being sought **(GRSP, 2010)**. The initial research suggested that, greater emphasis should be given to the road safety toolkit developed by the international Road Assessment Programme (iRAP), a tool that provides free information about various methods that may be used to prevent different types of crashes.

1.2 Aim and Objectives

This research aims to develop a systematic approach to road safety management that can be used by the public sector authorities concerned with planning using Cyprus as a case study.

The main objectives of the research are:

1. To report and summarise road crashes information in Cyprus, Europe, United Kingdom, and the rest of the world.
2. To identify how the methodology of the Road Assessment Programme (RAP) organisations is used to improve the safety of road networks.
3. To examine the applicability of the RAP approach in Cyprus
4. To evaluate iRAP's road safety toolkit by producing a new model that will be able to assist with the road safety needs of Cyprus
5. To collect data from the road authorities in Cyprus, to be input in the model
6. To demonstrate the usefulness of the model produced for Cyprus

1.3 Thesis Layout

To meet the above objectives, this Thesis is structured as follows:

Chapter 2 provides the methodology of the research explaining the measures need to be taken so that the aims and objectives may be achieved.

Chapter 3 gives a brief explanation of the crash causations around the world as well as a description of the road safety that exists in Cyprus.

Chapter 4 explains the methodology of the Road Assessment Programme organisations and how this was used in the research.

Chapter 5 describes the model developed for the needs of this project and presents the model's application using simulated data.

Chapter 6 covers the description and analysis of the data collected from the road authorities in Cyprus, so that they may be used on the road safety model created

Chapter 7 presents the road safety model's application on selected road segments in Cyprus and then provides the results.

Chapter 8 discusses the findings, and Chapter 9, presents the conclusions of the project and suggestions for further work.

Chapter 2:

Methodology

2 METHODOLOGY

2.1 Overall aim and how it may be achieved

As mentioned in Section 1.2, the purpose of this research is to investigate how road safety in Cyprus may be improved though improved management and to support the measures already taken to meet the specific road safety targets set by the EU.

2.1.1 Problem in hand

Currently, the procedure taken by the relevant Cypriot road authorities is mainly focused on the behaviour of the road users, the improvement of the after-crash emergency care, the reduction of the number of black spots, as well as the upgrade of vehicle safety. However, a systematic management approach to the analysis of the crashes seems not to exist and the data collected is analysed separately by the Police, the road authorities and the hospitals. It appears, therefore, that the measures and policies implemented may not be evaluated to the required level. Furthermore, the NRSC does not seem to have a clear framework of duties set up at each of the authorities **(Morfakis, 2009)**.

To this end, this work aims to mitigate the current situation by comparing road safety problem around the world and working solutions with those in Cyprus. This will enable a better understanding of crash causation in Cyprus and the information needs to address the problem so that a road safety management model may be developed to assist in the selection of appropriate road safety measures for hazardous roads according to the types of crashes and the places they have occurred.

The methodology developed in this research may be seen in Table 2.1 and is elaborated in the following sections:

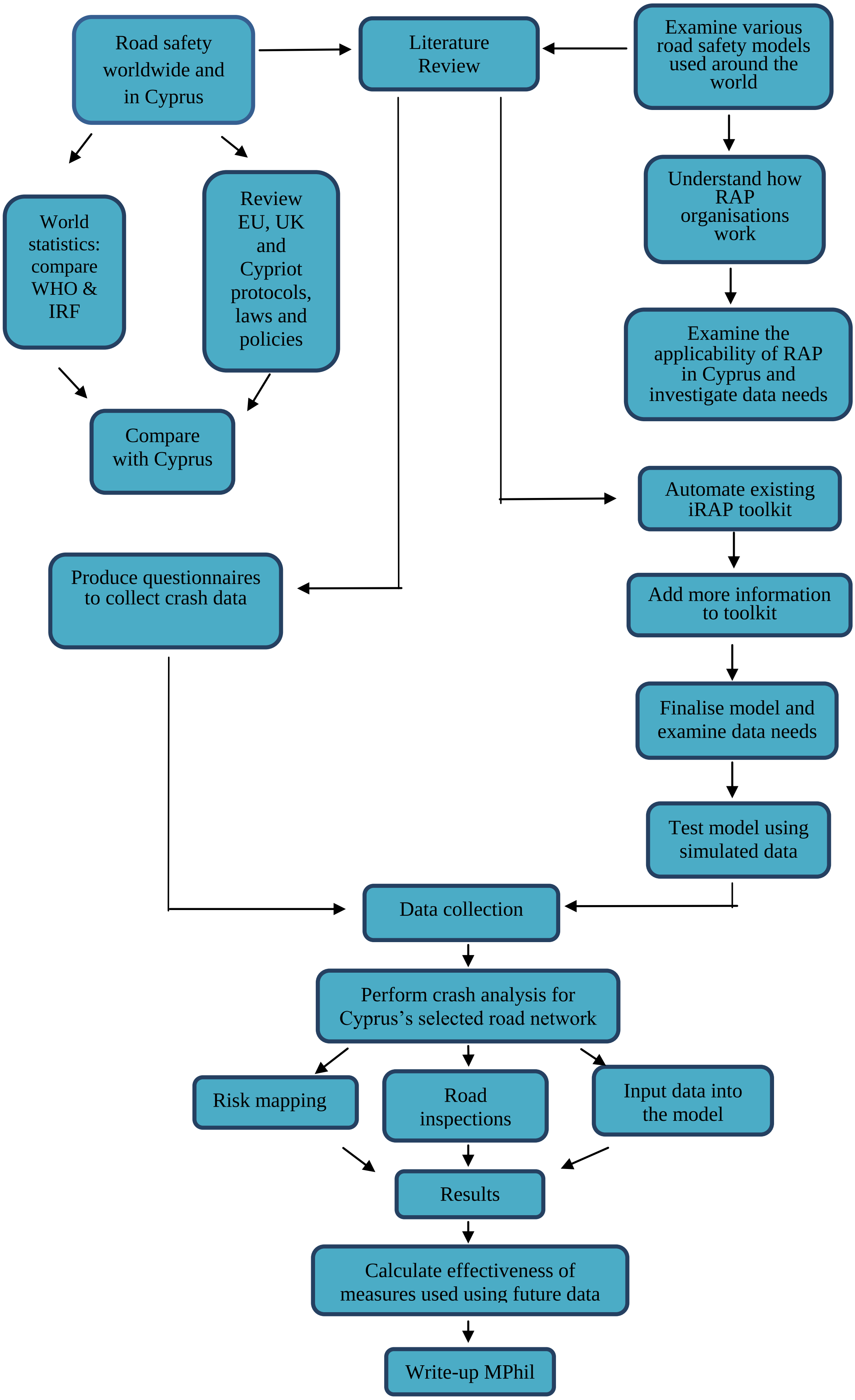


Table 2.1Methodology flowchart

2.2 Road crashes around the World and in Cyprus

Road crashes have been a major problem worldwide including Cyprus. It was, therefore, felt necessary to summarize the information that is currently available so that a better understanding of the situation may be achieved through a comparison of the available data.

Therefore, this part of the work will seek to:

i. Collect general crash information from a number of sources such as the International Road Federation (IRF) and the World Health Organisation (WHO), and compare them with similar ones from Cyprus.
ii. Examine the public authorities that are engaged in road safety in Cyprus and the existing level of management to observe the road safety needs and how they may be covered.

2.3 Methodologies and models considered

A number of methodologies and models from organisations around the world were considered to comprehend road safety management and whether the methods used are suitable to be applied for road safety purposes in Cyprus.

2.3.1 European/International Road Federation's tool for infrastructure, road and safety management

According to *Machado, 2006*, IRF suggests that to increase road safety a number of procedures may be used. These include:

- *Road safety impact assessment (RIA):* of a road with the several intersecting roads that exist.

- *Road safety audit (RSA):* to examine the safety of the design characteristics of a new road, or restoration of an existing one, at different stages of planning, design and early operation.
- *Road safety inspection (RSI):* Periodical review of an operating road network in by trained experts to identify the existing hazards.
- *Network safety management:* to reduce future crashes by targeting counteractive treatments to parts of the road networks where crash costs are high
- *Management of high-risk road sections*: to decrease future crashes in black-spot areas (i.e. those locations where a high concentration of crashes exists).

2.3.2 Intelligent Transport System (ITS) Toolkit

The ITS toolkit was designed by the Department for Transport in the UK, to assist transport planners and engineers with the selection of appropriate ITS tools to be included in transport plans. It includes various road safety measures and recommendations and takes into account the total costs of the measures to be implemented, so that to deliver maximum benefit for minimum cost **(DfT, 2010)**.

2.3.3 PIARC road safety manual

The PIARC manual is used by road safety engineers and practitioners to obtain a better understanding of the impact of the road infrastructure on road safety at all phases, from road design, crash data collection and analysis, to providing solutions as well as future aims **(PIARC, 2003).** Furthermore, it provides automatic calculations regarding crashes, horizontal curves, economic assessment and others, which can be used by the road authorities to easily obtain results.

2.3.4 Road Assessment Programme (RAP) organisations

RAPs are non-for-profit organisations that cooperate with road authorities of various countries, to help them make their roads safer. This is mainly achieved by tracking the busy and high-risk sections of roads where most of the crashes which result death or serious injury are concentrated **(iRAP, 2009a),** and by examining them, provide appropriate and cost effective treatments to the hazardous road network**.** RAP organisations include iRAP, the umbrella organisation of EuroRAP (Europe), usRAP (United States of America), AusRAP (Australia) and kiwiRAP (New Zealand) **(iRAP, 2009b)**. Their approaches have been applied to more than 60 countries around the world.

The RAP organisations share the same 3 protocols to identify the causes of crashes in a country **(EuroRAP, 2009)**. These are:

- *Risk Mapping*: Involves the production of colour-coded maps, which show the relative safety of roads in a region or country. Different types of maps are produced for road users and road authorities.
- *Star rating:* Involves the rating of the roads, on a scale of 1 to 5, regarding to how well they protect the road users from injury when a crash occurs. The rating is prepared according to the road protection standards such as roadside safety and is completed automatically using the iRAP's road safety software
- *Performance tracking:* monitors the performance of the road network over time. It is prepared using star rating and risk mapping data.

Furthermore, *Safer Roads Investment Plans* are made using iRAP's software which draw on around 70 proven road improvement options to generate affordable and economically sound infrastructure treatments for saving lives. It is recommended by iRAP, that 20% of road infrastructure budget should be spent on the road safety treatments **(McInerney et. al, 2010)**. Most of the treatments are included in the *iRAP's Road Safety Toolkit*, a standalone toolkit that contains detailed information on each of the treatments and can assist road authorities on treatment selection for a project.

2.3.5 Model selection

From the above, it may be seen that the RAP approach could provide appropriate tools that assist the Cypriot road authorities in their decision making process for improving the road safety. Chapter 4 describes each of RAP's methods with the aim of identifying the data required from them to be applied to a road network.

A great emphasis will be given to *iRAP's Road Safety Toolkit*, Section 4.7, to assess whether it is suitable for application for the needs of Cyprus. If not, ways of amending it, using information from other models and literature, will be investigated.

2.4 Model development

To build the Road Safety model, iRAP's road safety toolkit will be automated in an Excel spreadsheet and then tested in terms of its operation and needs using artificial data.

The automated toolkit will be developed further using additional information from the literature with the view to suggesting a new model, if needed, that will be tailored to the needs of Cyprus by considering the views of the required road safety authorities.

The model will seek to assist its user further, by enabling the chosen from the proposed road safety measures to be further analysed according to the characteristics of the road network concerned. Furthermore, it will allow for crash and cost data to be input in the model to both calculate the crash reduction and economic effectiveness of the measures to assist the road user in taking a more informed choice about the road safety measure chosen. This will be carried out by considering information from PIARC's road safety manual, from selection tools such as the ITS Toolkit (see Section 2.3.2), and from other road safety organisations.

The model will be validated throughout its development, using simulated data before applying the model to a real situation.

2.5 Model application in Cyprus

Following validation, the model will be used to analyse road safety features of two road sections in Cyprus. The road sections will be chosen to be representative of typical road classes where most crashes occur as described in Section 3.2. Subsequently a data collection procedure will be carried out.

2.5.1 Data collection

The data needed for the application of the model, will be collected by interviewing key personnel from the Ministry of Communications and Works and the Police in Cyprus. In cases where data is not available, other ways of acquiring them will be pursued.

The data will be used as input to the model, but also will enable an understanding of the general condition of road safety management and their procedures in Cyprus.

2.5.2 Model application

The model will be applied to identify the needs of the hazardous road sections selected and access the effectiveness and economic benefits of the road safety measures identified.

Chapter 3:

Road crashes around the world and in Cyprus

3 ROAD CRASHES AROUND THE WORLD AND CYPRUS

The aim of the Chapter is to provide a brief literature review of road safety. It is divided into two parts. The first part provides a brief description of the information currently available on road safety around the world and to provide a general picture of the problem. The second part focuses on road safety in Cyprus and describes the status of the road network in terms of road crashes along with some of the management processes the country is facing in terms of road safety and what the road authorities are doing to tackle them.

3.1 Road crashes around the World

The history of road crashes is believed to have initiated in London in 1896, when the first fatal road crash is estimated to have taken place **(PIARC, 2003)**. This began a whole new era as road crashes have increased to cause 3,450 fatalities daily **(WHO, 2004a).** Furthermore, road traffic fatalities have grown to become the leading cause of death for people aged between 10-24 years and one of the top three causes of death for people aged between 5-44 years **(WHO, 2009)**.

Figure 3.1 shows the traffic injury rates per capita around the world **(WHO, 2009)**. It may be observed that more crashes occur in some lower-income countries such as those in parts of Africa, the Middle East and the Indian sub-continent. However, European countries, Canada Australia and New Zealand have the least amount of crashes. WHO, estimates that if no measures are taken in the future, high-income countries will decrease their road crashes, but crashes in low-income countries will double **(WHO, 2009)** if they both continue to use their existing practice. Moreover, it was predicted that road crashes will increase to become the sixth highest cause of death worldwide by

2020 **(Murray and Lopez, 1996).** To highlight the importance of reducing road crashes, Table 3.1 gives some additional facts.

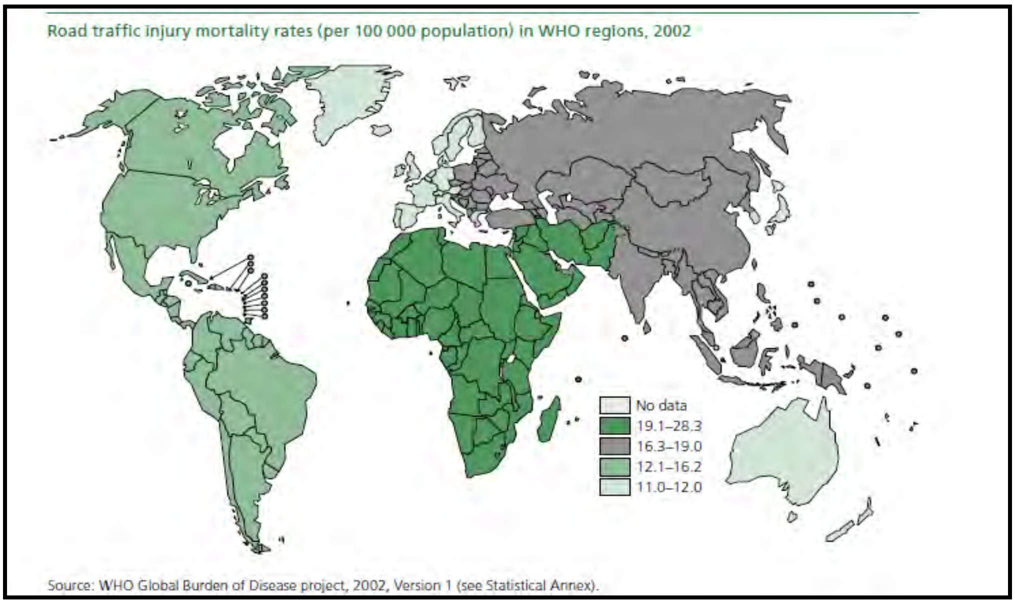


Figure 3.1 World road crash fatalities/100000 population (WHO, 2008)

Table 3.1 Some facts about road crashes

Some facts about road crash:

- 85% of the Worlds crashes occur in developing countries
- Each year there are 8000 pedestrian fatalities in EU countries. 25% of them occur on pedestrian crossings
- Bangkok: 2.4 deaths and 155 injuries per hour
- Vietnam, India: 750 fatalities/ 100000 population (Elvik, 2009)
- In Asia and Africa there is a negative relationship between traffic and health risk
- Costs 1-2% of World's GDP (WHO, 2008)

3.1.1 Worldwide comparison

Crash statistics from all the countries in the world were acquired from both the International Road Federation (IRF), which uses 2003-2007 data, and the World Health Organisation, which uses 2007 data, for comparison. The use of two sources instead of one enables for a validity check of the data.

Figure 3.2 shows the annual reported fatalities/100000 population. Since crashes are underreported in some low-income countries, WHO has calculated estimated fatality rates, represented by the green line. Africa, Eastern Mediterranean and South-East Asia are estimated to have the most underreported fatalities.

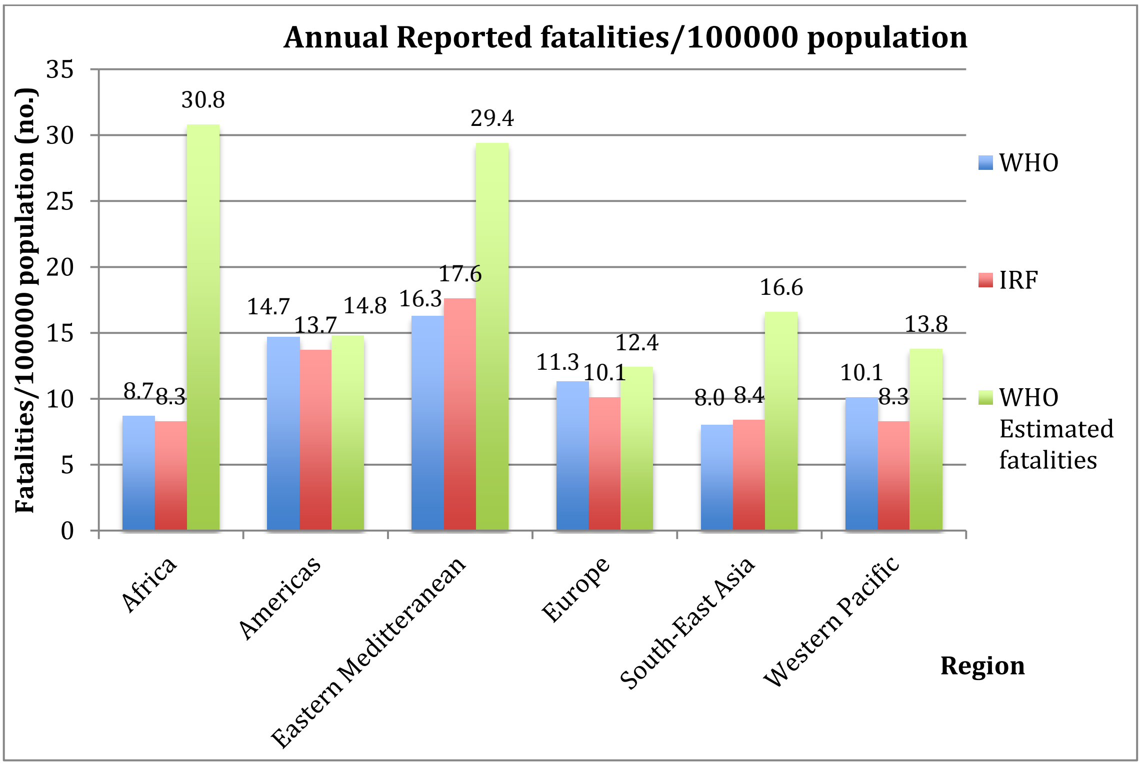


Figure 3.2 Annual reported fatalities/ 100000 population per region (WHO, 2009 & IRF, 2010)

By comparing road crashes per country's income, Figures 3.3 and 3.4 it may be established that even though the reported fatalities show that more crashes occur in middle-income countries, when taking into account WHO's estimated data, low income countries are shown to have the most fatalities. Additionally, in low-income countries, where only 3% of the population owns a vehicle, 1-1.5 out of 10 crashes that occur are fatal, Table 3.2 **(WHO, 2009 & IRF, 2009)**. Furthermore, if data inaccuracy is considered, this amount may be nearer 4 **(WHO, 2009)**. In higher income countries, the problem is the less severe, since approximately 64% of the population of the country owns a vehicle, but only 2.7% of the road users die **(WHO, 2009 & IRF, 2009)**.

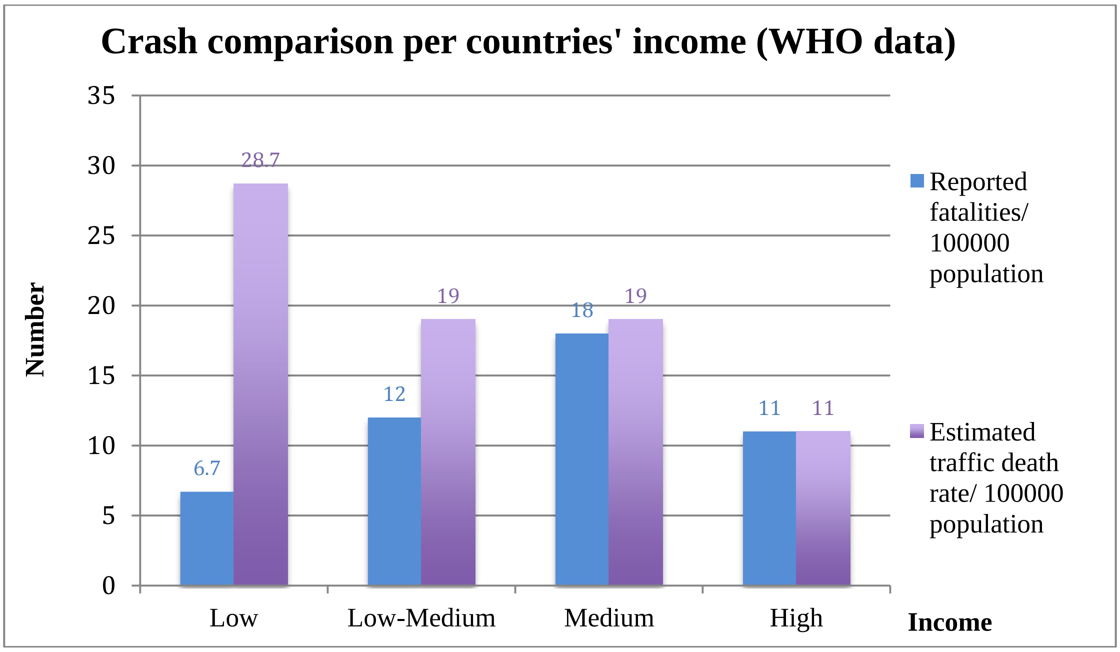


Figure 3.3 Crash comparison per country's income, WHO data (WHO, 2008)

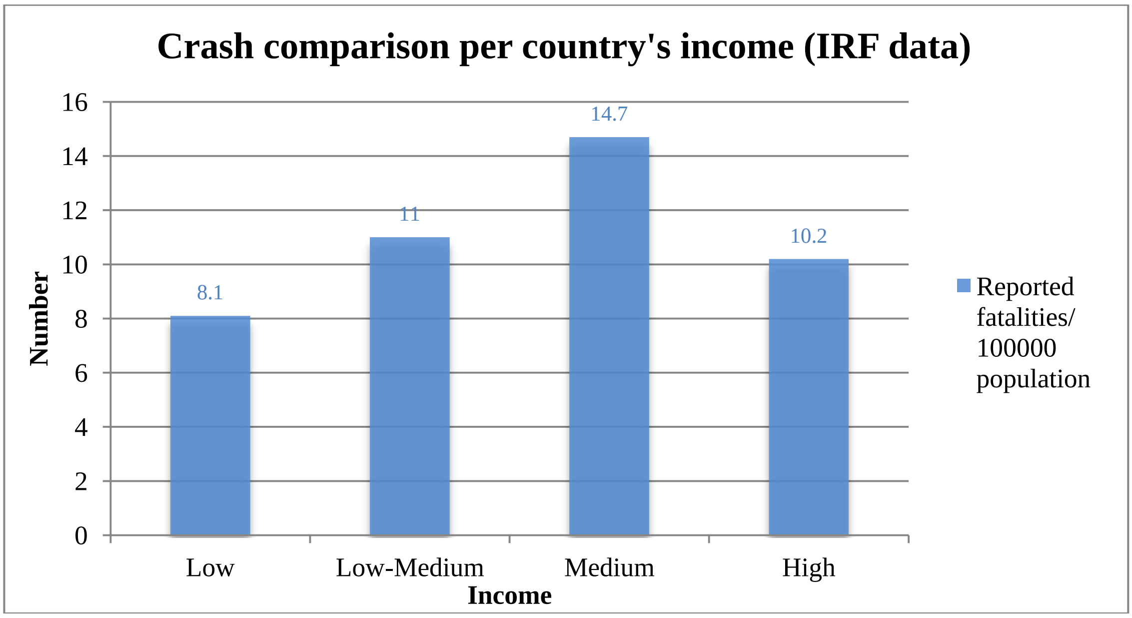


Figure 3.4 Crash comparison per countries' income, IRF data (IRF, 2010)

Table 3.2 Percentage of fatalities per crash occurrence **(WHO, 2009 &IRF, 2010)**

Data		Income			
		Low	Low-Medium	Medium	High
Percentage of fatalities from crashes that occur	WHO	10.20%	6.70%	4.70%	2.70%
	IRF	15.20%	5.60%	3.80%	2.90%
Percentage of estimated fatalities per crash occurrence	WHO	43.80%	10.60%	4.98%	2.70%
Vehicles/1000 population	WHO	31	105.3	299.1	620.9
	IRF	22.1	71.3	212	491

Figure 3.5, created using data from WHO, shows that in low and lower-middle income countries, more 4-wheeled vehicle passengers are killed than drivers. This may be because less people own a vehicle in low-income countries, Table 3.2, or the high level of multiple fatalities in crashes, or other reasons. In the graph it may also be seen that Cyprus' statistics are similar to the ones of high-income countries, apart from injuries to pedestrian, which are lower, since Cypriots tend to use vehicles to travel very short distances instead of walking **(Politis, 2010).** Moreover, two and three wheeler occupier crashes are a lot more than the average of all countries.

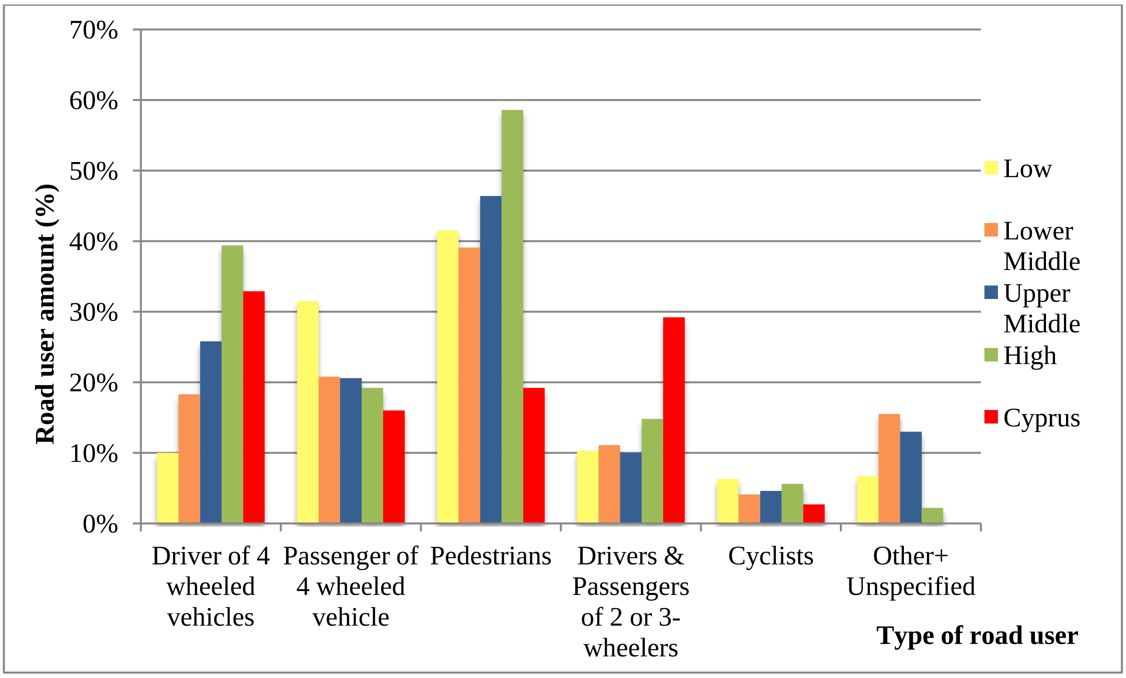


Figure 3.5 Road user fatalities per country's income-WHO data (WHO, 2009)

3.1.2 Causes of road crashes worldwide

In order to tackle the road crashes, it is important for their cause to be identified. There are three main reasons for a road crash to occur **(UN ESCAP, 2004 & YASA, 2010)**:

1. *Vehicle defect*: vehicle failure such as brakes, tyres, steering and suspension

2. a. *Roadway hazards*: these are hazards that exist because of poor construction of the road, such as: roadway services, hazard visibility, traffic control devices, behavioural control devices, traffic flow, road identification signs and weather

   b. *Poor roadway maintenance*: along with roadway improvements and road safety measure improvements, poor maintenance can occur for example due to failure of sanding or salting the road, existence of potholes or pavement roughness.

3. *Driver behaviour*: which involves human error and failure to comply with the traffic laws. In Britain, for example, human error accounts for 95% of road crashes when combined with vehicle faults and inadequate road maintenance

These factors usually co-exist.

Furthermore, road crashes may originate from either dormant failures by decision makers and road and traffic managers, or active failures by individual road users, as shown in Figure 3.6 **(Rumar, 1994).** This suggests that the road safety problem may be improved considerably by a great extent if the multiple sectors can collaborate to tackle the problem.

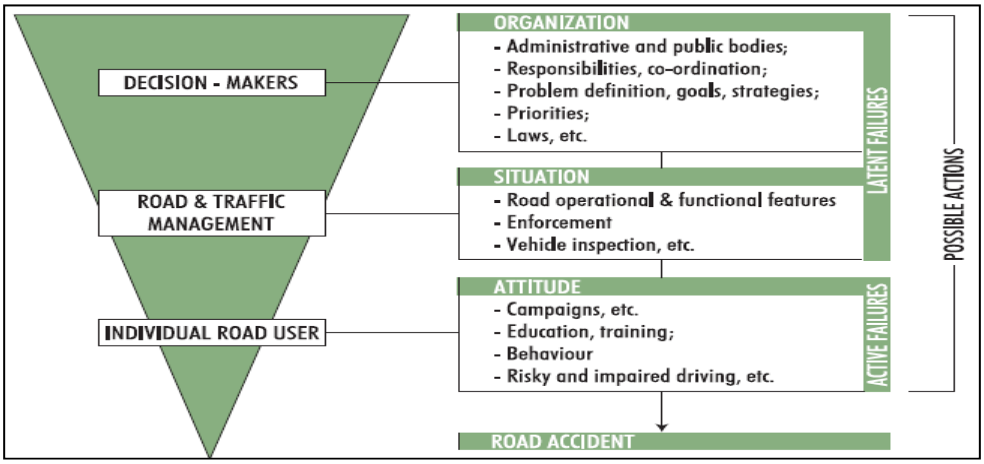


Figure 3.6 Levels of road safety actions **(Rumar, 2004)**

A description of the types of crashes that occur and their most common definitions around the world, including Cyprus, is given Table 3.3.

Table 3.3 Definition of crash types (Morfakis, 2010, PIARC, 2003, Scottish executive, 2007 and Slinn et. al, 2005)

Crash Type	Crash definition
Fatal crash	At least one person is fatally injured. In most of the countries, including Cyprus, fatal crashes are considered to be the ones where road users have passed away in the first 30 days after a road crash.
Serious injury crash	In most countries, including Cyprus, is defined as a person being admitted to the hospital for a period of more than 30 days or detained in hospital as in-patient or having fractures, concussion, internal injuries, crushing, severe cuts and lacerations and severe general shock requiring treatments and having injuries that are likely to cause a permanent disability.
Minor injury crash	Crash that causes an injury, which is neither fatal nor serious
Damage only crash	Crashes where only the motor vehicle has undergone damages. These type of crashes are often not reported to the police

Looking at the spatial occurrence of road crashes it may be observed that the main causes of road crash fatalities throughout the world may be summarised in Table 3.4, where vulnerable road users are considered to be pedestrians, cyclists, motorists **(SWOV, 2007)** and children who cannot protect themselves during a collision with a vehicle **(Lancashire County council, 2007).**

Table 3.4. Most common types of crashes and casualties around the world

Most common types of crashes and casualties	Worldwide	European Union	United Kingdom	Cyprus
Alcohol	✓	✓	✓	✓
Speeding	✓	✓	✓	✓
Failure to wear seatbelts	✓	✓		✓
No use of child restrains	✓			
Involving vulnerable road users	✓			
Failure to wear a helmet				✓
Loss of control			✓	
Failure to look properly			✓	

References: WHO (2008), RoSPa (2003), Jost et.al. (2010), DfT (2010), Cyprus Police (2010)

To add to this, in Cyprus the most prone to crashes type of road users are foreigners who account for 33% of the annual deaths, motorcyclists (35%) and drivers under 25 years old (30%). Similarly, 22% of road fatalities involve pedestrians and 3% cyclists and children **(Cyprus police, 2011).**

3.1.2.1 Nilsson's Taxonomy on road crash causes

As it may be seen from the above, most of the crash causes mentioned, occur due to driver behaviour. According to Nilsson's taxonomy, (2002), the three factors that affect the amount of people killed or being injured in road crashes are:

a. Exposure: which depends to the amount of vehicles on the road, the type and mode of travel and a combination of both. For example, if there are a lot of pedestrians in a road, the risk of a crash occurring is lower.

b. Road crash rate that exists in the area. Driving in area where a lot of crashes occur may result that there is a higher probability for a road user to be involved in a crash. In addition, increasing traffic volume is related to an increase in crashes according to **Elvik *et al* (2009)**. According to a study by **Elvik *et. al.* (2002)**, in a new urban arterial road in Norway, found that a 10% in vehicle volume can cause a 8.8% increase in crashes.

c. Injury severity usually depends of the road infrastructure, its furniture and what exists around in its vicinity, the type of road user and the means of travel.

Furthermore, Nilsson's taxonomy confirms that one of the reasons for road crashes to occur is driver behaviour **(Elvik et.al, 2009),** and suggests four measures, which can influence the number of crashes:

- Decrease the road users' proneness to crashes
- Change to modes of transport that have a lower risk of crash occurrence
- Decrease the crash rate for a particular mode of travel, and

- Reduce the severity of a crash and protecting people from injuries.

These measures have been developed further by various organisations to provide road safety solutions.

3.1.3 Road safety measures

Road safety measures or treatments are defined as the actions used by road authorities to decrease road crashes **(Elvik et. al, 2009)**. This may be done by separating the road network amongst the vehicles, motorcycles, cyclists and the pedestrians in a way that they do not interfere with each other. Three measures may be divided into three categories, as follows **(EuroRAP, 2006)**:

a. ***Engineering measures***: these include the different methods that engineers use to implement changes in the road to, for example, decrease the speed limit in a road, increase the visibility in the road or increase pedestrian safety by separating the pedestrians from the motorised traffic by introducing pavement railings.

b. ***Safer vehicle measures***: they involve measures carried out to check the safety of each vehicle, such as new car road assessment programme and vehicle roadworthiness. The measures are also addressed to bicycle and motorcycle drivers and refer to any safety lights or parts that may be installed on the bikes. The government implements the measures by law, most of the times rather than just recommending them.

c. ***Safer people measures***: they involve educating road users about road safety using measures such as lectures, school lessons, advertisements, leaflets and neighbourhood meetings, to educate people on road safety matters such as crossing the road. It also involves enforcement such as police patrols on enforcing laws on alcohol and speeding.

The road safety measures have a different affect in reducing crashes of different types. For example by installing pedestrian railings on a pedestrian pavement will not decrease vehicle-to-vehicle crashes but will protect pedestrians. Moreover, the road safety measures may be implemented worldwide, but it is mostly a matter of money and knowledge that prevents some countries from implementing them. So low income countries are recommended to implement basic measures have low cost, such as road lines.

3.2 Road safety in Cyprus

As described in Section 1.1, car crashes in Cyprus have decreased significantly since 2001 **(Cyprus Police, 2010)**, but a lot work still needs to be carried out to achieve the 2020 goal. Figure 3.7 shows Cyprus' crash statistics from 2001-2010 and the future decrease in crashes that is needed to meet the EU's 2020 directive.

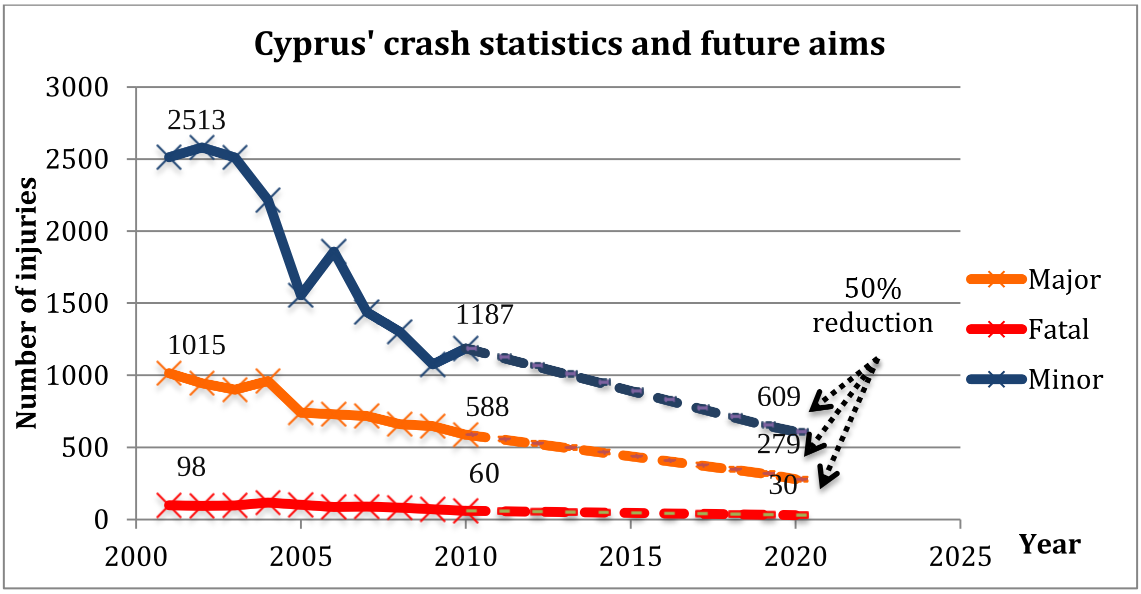


***Figure 3.7** Fatal and seriously injured crashes that occurred in Cyprus between 2004-2010* (Cyprus police traffic department, 2010)

3.2.1 Crash statistics per road type

The road classes in Cyprus are as follows **(Colin Buchanan Consortium, 2011)**:

- A roads: primary routes (motorways)
- B roads: district routes (national interurban roads)
- E roads: local routes (roads that connect communities)
- F roads: comprise the more important local access roads. F roads also connect communities, but they are usually constructed with lower standards (lower radius, width). They might be unpaved sometimes.
- U roads: are the remainder of roads and were considered 'unclassified'. This group includes the majority of urban 50kph residential and minor roads

The fatalities and injuries per annual million kilometres travelled[1], for the above road classes, were calculated using crash statistics of 2010 (see Table 3.5).

Table 3.5 Fatalities and injuries per road type per annual million kilometre travelled, 2010 crash data (sources: IRF, 2010; Cyprus Police department, 2011; Colin Buchanan Consortium, 2011)

Road type	Fatalities	Fatalities/annual million veh kms	Fatalities/ annual 100 million veh kms	Injuries	Injuries /annual million veh kms	Injuries/ annual 100 million veh kms
A	8	0.00085	0.08467	154	0.0163	1.6298
B	6	0.00063	0.06350	94	0.0099	0.9948
E	6	0.00063	0.06350	105	0.0111	1.1112
F	1	0.00011	0.01058	17	0.0018	0.1799
U	39	0.00413	0.41274	1392	0.1473	14.7317
Total	**60**			**1762**		

The Table shows that most of the crashes that occur in Cyprus, take place in urban residential and minor roads with a speed limit less than 50kph unlike UK, where most crashes occur in A-type of roads (**EuroRAP, 2009**) and non- build up roads with a speed limit greater that 60kph (**DfT, 2011**). Comparing Cyprus with other European

[1] This is the amount of movement travelled by vehicles.

countries (Figure 3.8), Cyprus has 25% crashes occurring in urban roads and 5% more on motorways compared to European average values.

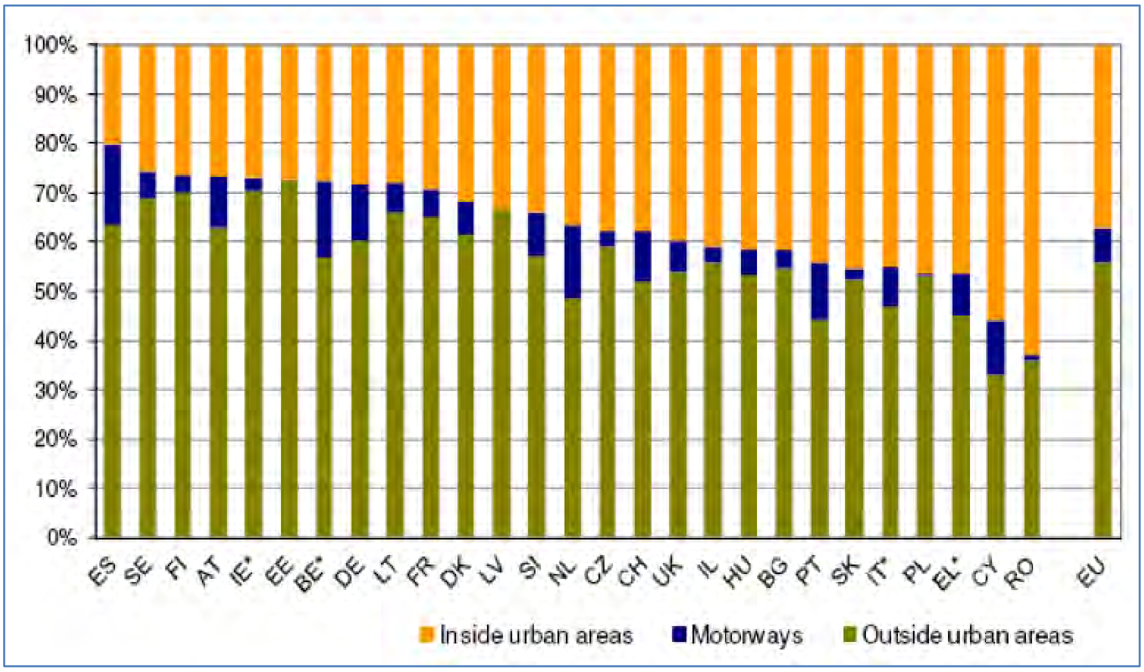


Figure 3.8 Percentage share of road deaths per road type in European Union **(ETSC, 2010)**

3.2.2 Crash statistics per road user

Figure 3.9 represents the crashes per road user in the European Union. Cyprus has around 10% more power-two-wheeler crashes, motorcycle and moped, occurring than the European union's average. On the other hand, cyclist crashes are less that the EU average as cycling is not popular in the country.

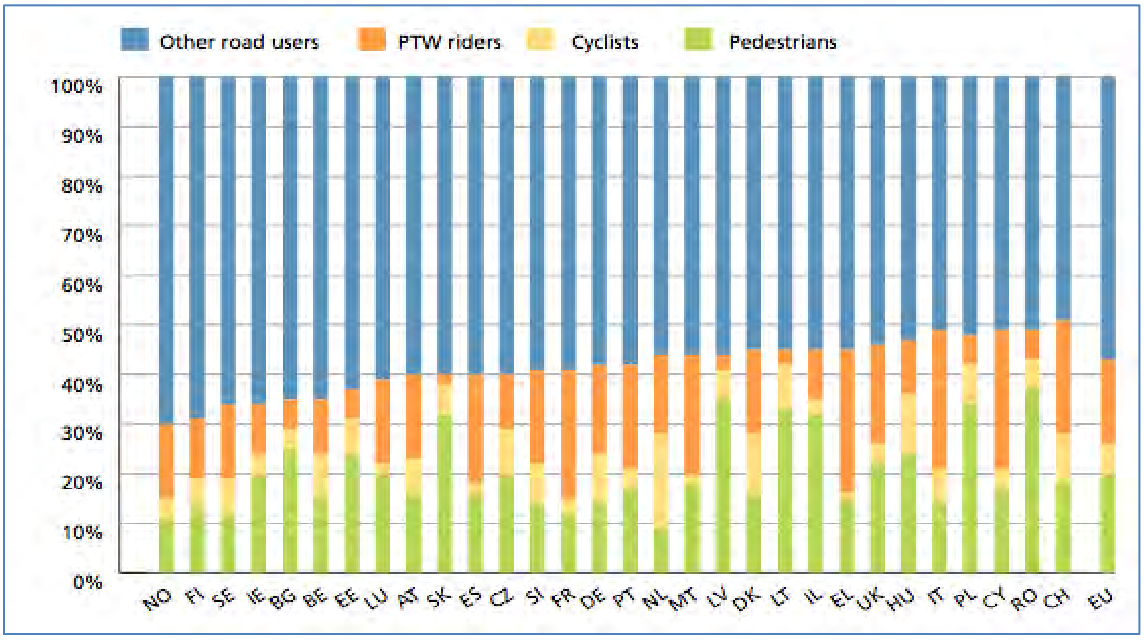


Figure 3.9 Percentage share of deaths by road user type in European Union **(ETSC, 2011)**

3.2.3 Causes of road crashes in Cyprus

The five main causes of crashes in Cyprus are (**Colin Buchanan Consortium, 2011)**:

1. Driving without due care
2. Alcohol use
3. Turning left without warning
4. Not using the left lane, and
5. Failure to give way

The causes mentioned above are mainly causes that occur due to driver behaviour.

3.2.4 Actions taken in Cyprus by legislative departments

Currently, the National Road Safety Council is separated into 6 road safety departments in charge of road safety in Cyprus **(Morfakis, 2009)**. These are:

1. *Department of Driver training and testing*: they are responsible for the driving schools and the level of training and testing difficulty needed for new drivers and driving school teachers.

2. *Department of Emergency medical care:* they are responsible for the vigilance of ambulances and whether they are staffed with trained personnel, for ensuring that there are enough emergency stations around all the areas of the island, and especially close to rural areas.
3. *Department of Legislation, Highway Code and enforcement*: it implements and updates road safety laws and their enforcement needed. It is responsible for the driving licence point demerit system.
4. *Department for Road infrastructure safety*: it is responsible for upgrading the level of road safety by inspecting and maintaining the existing road network, installing new road safety measures needed, checking whether and where black-spots exist and ensuring that the new roads constructed are safe enough for the road users. The road safety inspections and inspection policies are only carried out on roads that are under the jurisdiction of the department **(Colin Buchanan Consortium, 2011)**.
5. *Department of Road safety education and publicity/awareness*: it is controlled by the Police and concerns educating the public on road safety matters by carrying out free of charge lectures, activities and advertisement campaigns. It is also responsible for approving campaigns.
6. *Department of Vehicle safety*: it is responsible for upgrading and controlling the level of vehicle safety and checking whether old and new cars imported in the country meet the safety requirements.

These departments act effectively to reduce road crashes, but according to Morfakis (2009), a number of road safety council weaknesses exist. Some of them are:

- The number of road deaths decreases every year but not to the desired level as the Strategic Plan 2005-2010 required. Moreover, the numbers of injuries do not decrease at the same rate as the number of deaths.
- Poor quality of road user behaviour exists
- The results from policies and measures are not evaluated thoroughly
- There are no permanent and sufficiently staffed units for handling road safety matters
- There is no systematic collection and analysis of crashes and road data

The above indicate that there is a need for a systematic analysis of road safety in Cyprus that can provide the basis for an effective road crash policy. This may be achieved by creating a decision support tool to assist with road safety management.

3.2.5 Decision support tool

Road safety management provides a framework for managing road networks using long-term perspective, rather than a short-term view. The data used in road management are analysed in such a way that they may be used to facilitate in decision-making. This, therefore, enables the delivery of improved long-term solutions **(Robinson et. al, 1998)**.

Decision support tools provide management information to policy makers, which assist them with decision-making. Such tools can be a database or a model, which requires specific data to function. These data are often transformed to give information that will assist organisations in their decision making **(Robinson, 2008)**. The decision-support tool may incorporate principles of life cycle cost analysis as this forms the framework for medium and long term planning **(Kerali et al, 1990)**. The model will, additionally, provide feedback on the solutions that it gives, and will be able to meet the requirements of a management cycle requirements, as shown in Figure 3.10.

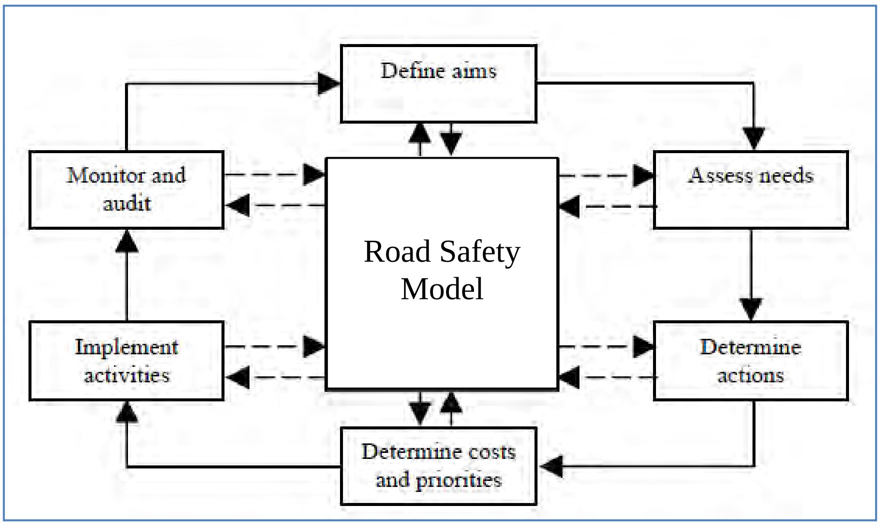


Figure 3.10 Road management cycle **(Robinson et al, 1998)**

The concept of the management cycle shown in Figure 3.10 is useful in that it provides a framework in which appropriate steps are taken in order to make a decision (**Robinson, 2008)**. To this end it was convenient to present the management cycle for the road safety for the needs of Cyprus to demonstrate how the model developed in this study may be used by the road safety authorities concerned. It may be described below:

Define aims: The aim of the model is to assist the road authorities in the selection of road safety measures to be implemented in the hazardous road networks of Cyprus. The model will not need additional data to that which is currently collected by the road authorities; and may be used by both the road infrastructure safety department and assist in the decision making process of the other departments. The model can be used to analyse the safety requirements of each road section considered individually and also those of the whole road network.

Assess needs: In order to assess the needs of a road network in terms of road safety measures, crash data from the road networks in Cyprus, as well as characteristics of the hazardous sections are required. The crash data will be used to identify the hazardous road sections of the road network, and to analyse the types of crashes that occur in them. Inspections of the road network will identify the road characteristics and any possible hazards that may exist.

Determine actions: The model will be used to identify the road safety measures that may be applied to the hazardous road network, according to the area characteristics around the road and types of crashes that have occurred. A selection from the recommended measures may be then made by the road authorities according to the requirements of the road section in question.

Determine costs and priorities: The road safety measures will be able to be compared and prioritised according their costs and crash reduction effectiveness.

Implement activities: According to the road authority's budget and the prioritisation results, the selected road safety measures can be applied to the road network.

Monitor and audit: The model will be used to assess the effectiveness of the measures applied. This will, therefore, require annual road crash statistics. Moreover, an annual road safety inspection to the road network may be needed to assist in the identification of any additional hazards.

The above decision-making cycle for road safety will consider a one-year period of analysis.

3.2.6 Summary

This Chapter has compared the global crash statistics and it was found out that even though more crashes per capita occur in high-income countries, the crashes are less severe and fewer fatalities occur. Furthermore, it was identified that the underreporting of crash data in low-income countries is estimated to be around 4.3 times bigger than the actual amount of crashes occurring. From the road user crash analysis it was shown that in high-income countries, more drivers of 4-wheeled vehicles die in crashes than passengers. This is believed to be because more vehicles exist in high-income countries therefore, more people will use them, which bring to the result that fewer passengers are in the vehicles. In low-income countries the problem is the opposite, therefore more people are in risk of getting injured when a crash occurs as more passengers are in a vehicle.

Additionally, from a comparison of the crash causations worldwide, it was found that the causes for crashes and injury permission are similar in all countries, the difference though occurs in the frequency of each in each country. Therefore, countries are able to help each other to decrease their crashes.

The causes of crashes around the world were scrutinised and confirmed the generally held belief that the vast majority of crashes occur due to driver behaviour. The Chapter also described the current road safety boards in Cyprus as well as some of the perceived weaknesses of the NRSC. From these findings it was considered that a road safety decision support tool could usefully be applied in Cyprus. The needs as well as the management cycle of the model were described.

The following Chapter will describe the methodology to reduce road crash rates prescribed by one of the leading organisations in the world dedicated decreasing road crashes, RAP. The suitability of this methodology for use in Cyprus will be examined, who wanted to implement EuroRAP in the past, but there were not any non-governmental companies willing to fund and assist in its implementation **(Christodoulou, 2011).**

Chapter 4:

The methodology of RAP organisations

4 THE METHODOLOGY OF RAP ORGANISATIONS

4.1 Introduction

As described in Section 2.3, Road Assessment Programme (RAP) organisations are non-for profit and work with both governmental and non-governmental organisations to improve every aspect of road safety **(iRAP, 2009a)**. They provide a robust methodology to assess road safety needs in developed and developing countries. This Chapter aims, therefore, to briefly describe how the organisation's protocols may be used to address the existing road safety in Cyprus.

4.2 Link separation

According to RAP organisations, to carry out any network analysis, the road network of a country should be separated into links, which have to be long enough and have more than 20 fatal or serious injuries in a three to five-year period. The road sections should be significant and distinct to the drivers such as trips between recognisable locations, and have similar road characteristics **(kiwiRAP, 2008).** In most cases, the organisation separates the links according to road types. For example, when applied to Great Britain, EuroRAP separated the road network according to Motorways and A-types of road; to find the most dangerous road links **(EuroRAP, 2010)**.

As mentioned in Section 2.3.4, RAP organisations share the same protocols, which are used to identify the causes of crashes. These are *Risk Mapping, Star rating and Performance Tracking*. *Safer Roads Investment Plans* are also carried out using iRAP's proprietary software which is available on-line to partner organisations and road authorities. Whilst this software is not available to the public, iRAP's Road Safety

Toolkit is. In the form of an Internet based tool that contains information for most of the road safety measures used in the software.

4.3 Risk mapping

Risk mapping is the first output from the application of the RAP methodology and involves colour coding of the road maps, which contain the separated road links. The maps are produced using serious and fatal injury crashes and different maps are created addressed to road users and road authorities separately. The maps show the collective risk and personal risk of drivers. Collective risk **(kiwiRAP, 2008)** is the total number of the killed and seriously injured crashes per kilometre over a number of years over a section of road. It is addressed mainly for road authorities as it emphasizes the parts of the road network that have more crash fatalities than others. It is defined as follows:

Equation 1. Collective risk

Personal risk maps, show the danger that an individual commences whilst driving-through a road. The model used to produce these maps is given in Equation 2.

Equation 2. Personal risk

Where,

Equation 3 Distance travelled per year

and, AADT is the annual average daily traffic in vehicles/day.

Using the results from the equations, and table 4.1, the risk of road sections are rated and the appropriate colour is used to colour-code the road map. An example from such analysis may be seen in Figure 4.1.

RISK RATING	COLLECTIVE RISK Average annual fatal and serious injury crashes per km	PERSONAL RISK Average annual fatal and serious injury crashes per 100 million vehicle-km	COLOUR
Low	≤0.039	<4	
Low-medium	0.04 ≤ 0.069	4 ≤ 4.9	
Medium	0.07 ≤ 0.10	5 ≤6.9	
Medium-high	0.11 ≤ 0.189	7 ≤ 8.9	
High	0.19+	9+	

Table 4.1. Levels of risk (kiwiRAP, 2008)

Figure 4.1 Risk map example from the UK (EuroRAP, 2007)

4.4 Star rating

Star rating provides a simple and objective measure of the level of safety of a road's design. This is a method of identifying or predicting where severe crashes are most likely to occur **(iRAP, 2009a)**. Ratings are carried out by inspecting the road network in under scrutiny, to identify the road elements that are known to have an impact on crash occurrence and their severity on the safety of the road. Depending on the safety of the road, stars from 1 to 5 are awarded for every 100m-road section, with 5 being allocated to the road section with the safest features **(EuroRAP, 2009).** For example, if during road inspection a road has no lighting, or lanes are non-existent, then a bad rating will be allocated to the road. A detailed explanation of the criteria used may be found in the booklets: *Star rating roads for Safety: the iRAP / EuroRAP methodology* and in *How Safe are our roads- Star rating New Zealand's State Highways* available from RAP websites.

4.4.1 Road Inspection

This part involves detailed engineering inspections of a road's infrastructure elements, such as road delineation, lighting, road width and surrounding environment **(kiwiRAP,**

2010), which have an effect on road safety crashes and their severity. This can be carried out using the following two options:

- *Drive through inspections,* which involve a vehicle travelling at just below the speed limit, where the passenger of the vehicle records the level of road infrastructure elements using a touch sensitive laptop, a GPS system and a video which is checked afterwards for quality assurance.
- *Video based inspections* which involves a specially equipped vehicle travelling at the speed limit, with 5 video cameras installed for recording panoramic views at 5-10m road intervals **(iRAP, 2009c).**

After inspection, engineers examine the videos, and detailed condition reports of the road section's elements are produced for every 100m long road sections. Star rating does not require any crash data in its calculation, as sometimes these are unavailable in some countries **(iRAP, 2009a).**

4.4.2 Road Protection scores- RPS

When road inspection and star rating is completed, RPS score is then calculated for each 100m interval, using iRAP's online software **(IRAP, 2009a)**. RPS is a numerical measure of the likelihood of a crash occurrence and its severity, based on the assessment of the road infrastructure elements **(EuroRAP, 2009)**.

According to the scores, charts like those in Figure 4.2 are produced showing the distance from the start of the road section, in kilometres, on the horizontal side and RPS score on the vertical side. Each RPS is allocated to one for the five star rating bands, each represented by a colour, which are then plotted on a road map, Figure 4.3. Different scores are produced for different road user types, indicating whether features of a road enable a safe journey for each user, being vehicle occupants, motorcyclists, bicyclists and pedestrians.

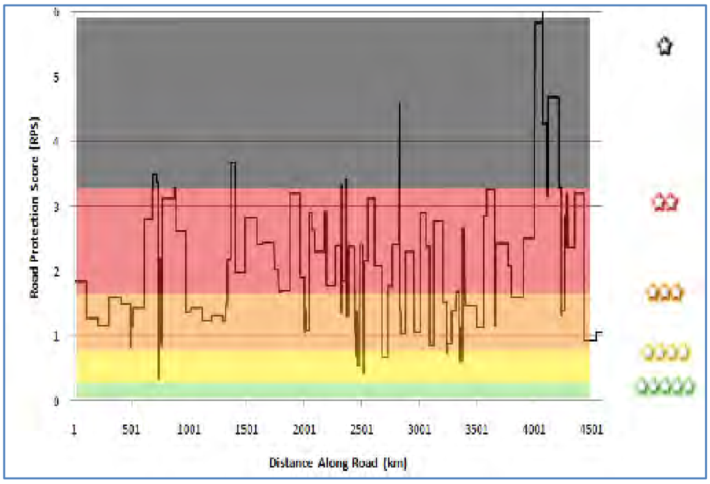


Figure 4.2 Car occupant road protection score example (iRAP, 2009)

Figure 4.3 Star rating example (iRAP, 2009)

4.5 Performance tracking

Performance tracking is usually carried out after road safety measures have been applied on a hazardous road network. Using risk mapping and star rating data the performance of the road network, in terms of crash numbers that have occurred in the past, is evaluated over time **(EuroRAP, 2009).** This method assesses the effectiveness of the road safety measures implemented to improve road safety. To allow for performance tracking to present results, risk mapping and star rating results for more than one year are needed **(kiwiRAP, 2010).**

4.6 Safer roads investment plans

Safer roads investment plans consist of various road improvement treatments to generate affordable and economically sound infrastructure options for saving lives. This part of RAP's methodology involves:

- Estimates of the number of deaths and serious injuries that occur: using the iRAP's online software **(iRAP, 2009c).** Estimated are used, as crash data in some countries are inexistent or unreliable. Real value data may be used if the plans are carried out in countries that record crash data.
- The application of proven engineering treatments: if a treatment is triggered, it means that it is suitable to be applied to a road section. This is automatically carried out by *iRAP's online software*. More details about each of the treatments are included in, the free of charge, *iRAP's Road Safety Toolkit website* **(iRAP, 2009c)**.
- Economic assessment: of the proposed treatments is undertaken by comparing the cost of their implementation with the reduction in crash costs that would result after their implementation. The Benefit-Cost ratio is calculated for each treatment and if they exceed a threshold BCR they are allowed to be included in the plan. BCR is the economic value of discounted benefits from KSI saved and costs of treatment and maintenance, over the period of 20 years. **(iRAP, 2009c).**

Table 4.3 illustrates the outputs of countermeasure comparison from iRAP's online software and Figure 4.5 shows the automatically produced casualty saving maps. The maps show the place where a treatment should be applied.

Table 4.2 Example of recommended countermeasures to be implemented (iRAP, 2009c)

Countermeasure type	Sites / length	Estimated cost	KSI saved	Value of safety benefit	Cost per KSI saved	BCR
Shoulder sealing and provision	1,104	$26.7m	9,091	$1,104m	$14,004	41
Pedestrian footpath	522	$26.5m	6,107	$741m	$8,928	28
Roundabout	555	$7.5m	1,548	$188m	$4,829	25
Traffic calming	126	$3.4m	1,460	$177m	$2,340	52
Pedestrian crossing	186	$3.9m	454	$55m	$24,964	14

Figure 4.4 Maps showing the casualties that could be saved in each road section as well as recommended countermeasures (iRAP, 2009c)

4.7 iRAP's Road safety toolkit

iRAP road safety toolkit includes more than 50 road safety measures that can help treat eight of the most important crash types in the world. These are:

- Head-on collisions
- Collisions at intersections
- Lane changing
- Manoeuvring
- Rear-end
- Run off-road
- Vehicle- Cyclist
- Vehicle-Pedestrian

A definition of each crash is described in Table 4.3.

Table 4.3 Definition of road crash types (iRAP toolkit, 20011; Illinois department of transport, 2009)

Head-on collisions	Crashes where vehicles that travel towards one another in opposite directions collide
Collisions at intersections	Are the crashes were vehicles collide when one of them, or both are trying to turn into, or come out of a lane
Lane changing	Crashes occur when one vehicle attempts to change lane and collides with another vehicle that is travelling at the same direction
Manoeuvring	Crashes that occur when vehicles manoeuvre which involve crashes when vehicles make turns, not at intersections, and vehicles entering or exiting a roadway
Rear- end	Are the crashes where one vehicle collides at the back of another vehicle, which is usually travelling in front of it
Run off road	Involves crashes that occur when vehicles go out of their normal path and outside the roadway, and in most cases, they hit a fixed object at the edge of the road

For each of these crash types, the toolkit provides a number of measures that are more suitable in reducing them. The information provided for each road safety measure is **(iRAP, 2011)**:

- Advantages and disadvantages
- Cost
- Percentage of casualty and crash reduction during their lifetime
- The period of time in years (treatment life) that a measure may be expected to continue providing a safety benefit before it will need renewal **(McInerney et. al, 2010)**
- The types of road users that a measure may affect (i.e. pedestrians, vehicle drivers and passengers, motorcyclists, bicyclists, heavy motorised vehicle and public transport vehicle users), and
- The most common types of crashes each measure may prevent

Figure 4.4 shows a sample of iRAP's toolkit to date.

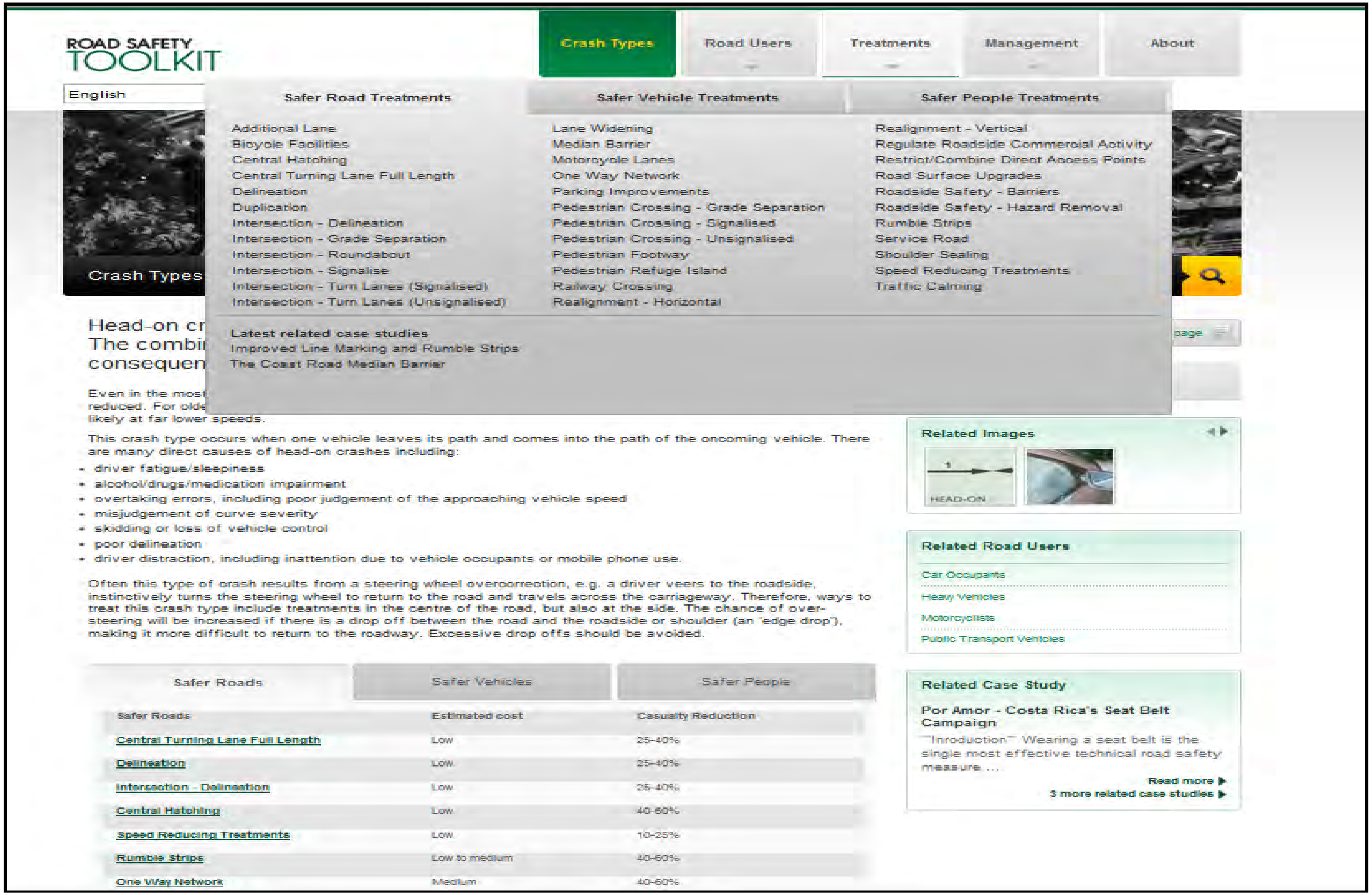


Figure 4.5 iRAP's existing road safety toolkit **(iRAP, 2011)**

The road safety measures included in the toolkit are shown on Table 4.3 and are separated into 3 categories: safer roads, safer vehicles and safer people **(iRAP, 2011)**.

Table 4.4 Road safety toolkit's measures **(iRAP, 2011)**

Safer roads			Safer vehicles	Safer people
Additional lane	Intersection- turn lanes (un-signalised)	Restrict/combine direct access points	New car assessment programme (NCAP)	Addressing alcohol and other drugs
Bicycle facilities	Lane widening	Regulate roadside commercial activity	Motor vehicle standards	Child safety initiatives
Central Hatching	Median barrier	Realignment-horizontal	Used car safety rating	Education
Central Turning lane full length	Motorcycle lanes	Roadside-safety barriers	Vehicle features and devices	Emergency response
Delineation	One way network	Roadside safety-hazard removal	Vehicle road worthiness	Enforcement
Duplication	Parking improvements	Road surface upgrades		Fatigue management
Intersection-Delineation	Pedestrian crossing-grade separation	Rumble strips		Helmet and protective equipment
Intersection-grade separation	Pedestrian crossing-signalised	Service road		Licensing
Intersection-roundabout	Pedestrian crossing-unsignalised	Shoulder sealing		
Intersection-signalised	Pedestrian footway	Speed reducing treatments		
Intersection-turn lanes-signalised	Pedestrian refugee island	Traffic calming		

4.8 Concluding summary

This Chapter presented the methodology developed by RAP organisations to reducing road crashes and road casualties around the world. Because not all the information about the protocols is freely available, the ones to be examined for implementation in Cyprus are risk mapping, road inspections using tools available, and iRAP's Road Safety Toolkit. Using this information, a road safety model will be developed in this research which will assist in the choice of appropriate road safety measures by considering the relevant engineering, social, environmental and economic criteria. However, to perform a complete management cycle, additional data may be required.

Chapter 5:

Model development and replica application

5 MODEL DEVELOPMENT AND REPLICA APPLICATION

5.1 Introduction

According to Chapter 4, the iRAP toolkit is suitable for use in Cyprus but needs further development to meet the country's needs. To this end, it was felt necessary to automate iRAP's Road Safety toolkit, test it using simulated data, assessed in terms of its operations and needs with the view to suggest a new model. This Chapter is separated into three parts: the iRAP's road safety toolkit automation, the development of the model using additional data from the literature and the data needs of the model in order to produce valid results. Throughout its development, the model was tested using artificial data.

5.1.1 Steps taken to build the model

The steps taken to create the model were:

1. Automate iRAP's Road Safety Toolkit
2. Add more road safety measures to the toolkit as well as area characteristics where each measure can be applied to
3. Allow for crash and casualty economic assessment to be calculated on a number of road safety measures considered implementation to identify the most beneficial.
4. Allow for annual calculation of the crash and casualty effectiveness of the implemented road safety measure, a year after its implementation

Therefore, the road safety model will consist of five parts:

PART A will enable a selection of road safety measures according to crash types, area characteristics and road safety measure characteristics of the road under scrutiny.

PART B will facilitate the user to input data for the detailed analysis of the road safety measures. It considers crash and casualty costs, area characteristics and costs for each selected, from Part A, road safety measures.

PART C: will provide the economic analysis of crash reduction of the three, or more, measures selected for implementation in a road section

PART D: will provide the economic analysis of casualty reduction of the three, or more, measures selected for implementation in a road section, and

PART E: will estimate the future effectiveness of crash and casualty reduction of the selected measure according to the crashes that have occurred after the road safety measure has been implemented in a road section.

The steps taken to create the road safety model are described below in detail.

5.2 Toolkit's automation

IRAP's road safety toolkit was automated in Microsoft Excel; to observe how well it operates before additional information was added to it. Dropdown arrows have been used so that treatments could be filtered according to:

- Advantages of each measure
- Disadvantages of each measure
- Cost of each measure. The costs were defined as low to high as it is very difficult to define a price range for each measure, because it varies according to

the area and the country the measure is implemented in. Therefore, a qualitative amount was considered.

- Percentage reduction in the amount of casualties that each measure can offer during its lifetime.
- Percentage reduction in the amount of crashes that each measure can offer during its lifetime.
- The period of time in years (treatment life) that a treatment may be expected to continue providing a safety benefit before it will need renewal **(McInerney et. al, 2010)**
- The road user that each measure can assist, and
- The types of crashes that a road safety measure can prevent.

The automated toolkit is shown in Figure 5.1 and Table 5.1, shows the different limits for the options of the automated toolkit, to enable the comparison of the treatments according to their characteristics.

Table 5.1 Definition of limitations in the automated toolkit

Cost	Casualty reduction	Crash reduction	Treatment life (years)	Road user involved
Low	☆ : 0-10%	☆ : 0-10%	1year/temporary	C-Car occupants
Low-Medium	☆☆: 10-25%	☆☆: 10-25%	1-5	B-Bicyclists
Medium	☆☆☆ : 25-40%	☆☆☆ : 25-40%	5-10	HV-Heavy vehicles
Medium-High	☆☆☆☆ : 40-60%	☆☆☆☆ : 40-60%	10-20	P-pedestrians
High	☆☆☆☆☆ : ≥60%	☆☆☆☆☆: ≥60%	10-25 20+	PTV-Public transport vehicles

Accident types and treatment																
Treatments									Accident Types							
No.	Safer roads	Benefits	Issues to consider before implementation	Cost	Casualty reduction (*****= most effect...	Crash reduction effectivenes s (*****=most effective...	Treatment life	Road User involved	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off-road	Vehicle-cyclist	Vehicle-Pedestrian
1	Central Hatching	Fewer head-on crashes and overtaking crashes	If rumble strips, or other raised pavement devices are also used, the risk to motorcycles and pedestrians (trip hazard) must be considered.	Low	***	**	5-10yrs	C								
		Can remove turning vehicles from through traffic lanes, resulting in fewer rear-end and turning crashes and improved traffic flow						B								
		Improved delineation						HV								
		Some reduction in speeds						P								
		Possible protection for pedestrians						PTV								
		Inexpensive														
2	Central turning lane full length	Reduced head-on crashes	Two way turning lanes should not be used at intersections	Low	**	***	5-10yrs	C								
		Reduced rear-end and turning crashes	Appropriate pedestrian protection should be used in areas with pedestrian activity					B								
		Improved traffic flow.	Two way turning lanes can encourage inappropriate development along the road, so they are best used as a solution for existing roads where more advanced access controls are not possible					HV								
								M								
		Some reduction in speeds						PTV								
			In many countries line marking is ignored													

Figure 5.1 Automated iRAP toolkit

5.2.1 *Application of model using artificial data*

The automated toolkit was first applied using artificial data in order to examine its use tin a road network. The road network data used were artificial data concerned with a small road section of 100m in length (referred herein as University road). The data (see Table 5.2) concerns information about the road section and crashes, which have occurred in it in the past 3 years. Assumed road safety requirements associated with the governing road authority are also given in the Table.

Table 5.2: Artificial data

Road name: University Road	
Length:	100m
Road type (according to area):	Asphalt
Area type	Urban
Functional class of roadway	Minor arterial road
Number of lanes:	2
Speed limit:	60 km/hr.
Annual Average Daily Traffic (AADT):	12000 veh/day
Crash amount in the past 3 years:	15 crashes: 1 fatal, 4 major crashes, 4 minor crashes and 8 damage only
Types of crashes:	10 run off road, 3 head-on and 2 vehicle-pedestrian
Casualties in the past 3 years	13 casualties: 1 fatal, 5 major injuries and 9 minor injuries
Additional Information about road	Hazardous right turn
Required crash reduction effectiveness of measures:	≥ 30%
Required casualty reduction effectiveness of measures:	≥ 30%
Required life-time of measure:	≥ 10 years
Required cost of measures:	Less than medium
Additional requirements:	Focus only on engineering measures

By examining the crashes in University Road it was found out that the majority was run off road crashes. The road safety measures were, therefore, chosen according to the measures that could decrease run off road crashes, and the measures that met the road authority's requirements. The selected measures are shown in Table 5.3.

Table 5.3 Eliminated road safety measures

Road safety measures	
Delineation	Realignment: -
Intersection- delineation	*Vertical*
Lane widening	*Horizontal*
Median barrier	Road surface upgrades
Speed reducing treatments	Rumble strips
Shoulder sealing	Roadside safety barriers

Even though the model can recommend a variety of road safety measures based only a small amount of information, a lot of additional information will be required from the road user to select the most appropriate amongst the selected measures for Artificial Road. However, the model's user may usually be a road authority's employee who makes decisions about road safety measures. Therefore, the model's user will need to have knowledge or carry out additional reading about each measure characteristics in order to choose the most appropriate.

Therefore, it was decided that additional road safety measures should be included in the model to offer for greater variety of choice. In addition, it was felt necessary to include criteria based on coarse traffic information of the road length considered in the model.

5.3 Model development- Additional road safety measures and area characteristics

The existing road safety measures and their features were enriched further with options found in journals, manuals and information from road safety organisations. This assisted in the addition of more than fifty new measures to the automated toolkit, thus offering a greater variety of measures. These, along with their details, were input in the model and are presented in Table. 5.4.

Table 5.4 Additional road safety measures (Harvey, 1991, Department for transport, 2006 & 2007, ETSC (2010), Test 1988, Forbes, 2004, Vision Zero, GRSP (2006), RoSPA (2003), AASHTO)

Safer Roads			
Bicycle facilities:-	Delineation:-	Parking improvements:-	Speed reducing treatments:-
Bicycle lanes	*Central median kerb*	*Amenity trailing*	*Mini roundabout*
Wide kerb lanes	*Central line markings*	*Bollards*	*Chicanes*
Paved shoulder	*Central raised kerb divider*	*Guard rails/pedestrian barriers*	*Pavement narrowing*
Combination lanes	*Edge marker posts*	*High kerb (edge)*	*Speed cushion*
Bicycle paths	*Edge lines*	*Raised planters*	*Speed humps:-*
Bicycle signal	*Informative signs*	*Wire railings*	*Flat top*
Bicycle rack (inverted U, 2 bicycles)	*Retro-reflective pavement markers (cats eyes)*	Pedestrian crossing-Zebra	*'H' hump*
Bus lanes	*Raised rib edge lines*	Pedestrian footway:-	*'S' hump*
Bus lay-bys	*Regulatory signs*	*Raised kerb footpath*	*Sinusoidal*
Crash cushions	*Road markings*	*Barrier kerb footpath*	*Raised junction*
Lighting	*Vehicle activated warning signs*	*Segregated footpath*	*Round top*
Pedestrian grade separation:-	*Warning signs*	Pedestrian Pelican crossing	*Thermoplastic hump- thump*
Pedestrian crossing-bridge	*Gateways*	Pedestrian toucan crossing	Speed activated signs
Pedestrian crossing-underpass	*Speed cameras*	Motorcycle road safety barriers	
Safer Vehicles			
Daytime running lights-DRL	Safe bicycle use	Safe motorcycle use	
Safer People			
Education:-	Publicity	Seatbelts	Speed
Educational presentations			
Leaflets/Newsletters			
Neighbourhood meetings			
School teacher education			
Police/ Road authority education			

Special information to enable road safety practitioners with the selection of the measures needed to improve bicyclists' safety was acquired from the Bicycle Countermeasure Selection System (BIKESAFE), **(FHA, 2006)**. The organisation's

Selection Tool inspired in enabling the model to eliminate the road safety measures according to the area characteristics. These are:

- The area where the road section in question is (urban, suburban, rural and interurban). Urban roads exist in residential, major and city centre roads where the speed limit is less than 50km/hr. Suburban roads are outside the main central area that have more traffic congestions and longer travel times than urban roads of nearly 40km/hr. Interurban roads have a speed limit of greater than 80km/hr. and consist of motorways, three lane carriageways and dual carriageways. Rural roads are major and minor roads that are outside urban areas and connect main roads, villages and country lanes **(Slinn et al, 2005).**
- The functional class of the roadway (local, collector and minor arterial and principal arterial).
- The vehicle volume expressed in terms of Annual Average Daily Traffic (AADT).
- The speed limit of the road in km/hour, and
- The number of lanes that exist.

Table 5.5. Area characteristics **(BIKESAFE, 2011)**

• Area type: ○ Urban ○ Suburban ○ Interurban ○ Rural	• Functional class of roadway: ○ Local ○ Collector & minor arterial ○ Principal arterial
• Vehicle volume (AADT): ○ Low (<5000) ○ Medium (5000-10000) ○ Medium-High (10000-20000) ○ High (>20000)	• Speed flow (km/hr.): ○ Low (<50km/hr.) ○ Medium (50-69km/hr.) ○ High (≥70km/hr.)
• Number of lanes: ○ ≤2 ○ 3-4 ○ ≥5	

By adding these characteristics to the road safety model, Part A of the model was complete (see Appendix A).

5.3.1 *Application of model's Part A using artificial data*

The model was again examined using the artificial data shown in Table 5.2.

The assumptions made when applying the model are:

1. The road authorities want to focus only on engineering measures; vehicle and people safety measures were not included
2. Road Inspections have already taken place in the University Road examined, and
3. The discount rate used for projects in Cyprus is 10%

By eliminating data using the dropdown arrows, the model revealed 22 measures that were suitable to be applied on the road section under scrutiny. These are given in Table 5.6

Table 5.6 Treatments selected by the model.

Safer Roads	
Crash cushions	Delineation:-
Lighting	*Central line markings*
Road safety-barriers	*Chevron boards*
Rumble strips	*Edge marker posts*
Shoulder sealing	*Edge lines*
Other traffic calming measures	*Retro-reflective pavement markers (cats eyes)*
Speed reducing treatments:-	*Raised rib edge lines*
Mini roundabout	*Road markings*
Chicanes	Regulatory signs
Pavement narrowing	Informative signs
Speed cushion	Vehicle activated warning signs
	Warning signs
	Speed cameras

The advantage of this procedure is that the user of the model will not need to search for additional information about the measures to distinguish whether they are suitable to be applied to a minor arterial road section with a speed limit of 60km/hr., as the model is able to do that.

The unknown factors are the existing road safety measures in place in University Road. This information can be obtained from either previous projects that might have been applied in the area or by carrying out road inspections on the road section. The advantage of the road inspections is that not only the road safety measures that exist can be recorded, but also any hazards in the area. Hazards can be defined as any road safety measures that are beyond their life expectancy or broken, such as pavement lines that were erased or road signs that were hit by a car, or any dangers in the road such as a trees that block the view of the drivers **(iRAP, 2011).**

As a road inspection has not been carried out on University Avenue, the existing road safety measures are unknown. Therefore, the it was felt necessary to assume that road inspection has been carried out on the road section, and after further elimination of the measures, it was decided that either delineation-chevron boards, edge rumble strips or road safety barriers, could be positioned to the road network, Figure 5.2. The rest of the treatments were considered unsuitable either because they already exist or the selected measures were more advantageous than them.

An economic assessment of costs and benefits of the three selected measures should then be carried out to ensure that the benefits of implementing a measure would outweigh the costs **(PIARC, 2003)**. As there is often a budget set by the road authorities for road safety measures, the economic analysis will facilitate the selection of the most economically beneficial measures for the hazardous road network.

Crash types and treatments																						
Road Safety Measures				Treatment Information					Crash Types								Area Characteristics					
o.	Safer roads	Benefits	Issues to consider before implementation	Initial cost Low Medium High	Crash reduction effectiveness (*=0-10% **=10-25% ***=25-40% ****=40-60% *****=>60%)	Casualty reduction effectiveness (*=0-10% **=10-25% ***=25-40% ****=40-60% *****=>60%)	Effective life of treatment	Road User involved	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off road	Vehicle-Cyclist	Vehicle-Pedestrian	Area type	Functional Class of roadway	Vehicle volume Low(<5000) Medium(5000-9999) Medium-High (10000-19999) High(>20000) veh/day	Speed limit (km/hr) Low(<49) Medium(50-69) High(>70)	Number of lanes
8d	Delineation Chevron Boards[97]	Prevent run-off road crashes at bends Effective at night time Cost-effective	Prone to be hit regularly and need replacement	Low	***	***	5-10 years	C B HV M P PTV									Suburban Rural Interurban	Collector and minor arterial Principal arterial	Low Medium Medium High High	Medium High	≤2 3 ti 4 ≥5
36	Roadside safety-Barriers[69,97,98]	If properly designed, barriers should reduce the severity of crashes involving out of control' vehicles.	A safety barrier should only be built if the existing hazard cannot be removed (see hazard removal). The end points of barriers can be dangerous if not properly designed (see Related Images for examples of poor end points). Safety barriers should not be close enough to the road to be a hazard to vehicles. Minor damage can reduce the safety benefits of barriers if they are not properly repaired. Roadside barriers can be a hazard to motorcyclists.	Medium	****	***	5-10yrs	C HV PTV									Suburban Rural Interurban	Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
39	Rumble strips[69,97]	Reduced run-off-road and head-on crashes. Improved visibility of edge lines or centre lines during wet weather. Potential for reduced maintenance of road shoulder. Advanced warning to hazards. Can be placed closer to a hazard to give the illusion of increasing speed	Longitudinal rumble strips may be a hazard to cyclists and motorcyclists. Gaps in the rumble strips may be needed in some areas to allow water to drain from the road surface. The noise made by rumble strips can de difficult for drivers of larger vehicles to hear. Rumble strips should not be used near housing because of the noise they make. There must be at least 150 mm of sealed road outside longitudinal rumble strips or the road may be weakened.	Low-Medium	20%	40-60%	10-20yrs	C HV PTV									Urban Rural Interurban	Collector & minor arterial Principal arterial	Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5

Figure 5.2 Selection of treatment and their information from the model

5.3.2 Economic assessment

Further to the above, an economic assessment module was added to the model to allow for comparison of the treatments in terms of economic costs and benefits based on information from the World Road Association's PIARC road safety manual **(PIARC, 2003)** and standard economic analysis techniques.

It was decided that two separate sub-modules should be created to deal with the economic assessment for crash and casualty reduction respectively. In other words, the model can be used to assess the impact of measures needed to decrease the number of crashes in a road section, or the amount of casualties that occur in these crashes. These are going to make Parts C and D of the model. The equations used, to enable a comparison between the selected measures, are presented in the following subsections.

5.3.2.1 First year rate of return (FYRR)

First year rate of return is the return on the money invested in a project in the first year of the scheme, and is expressed as a percentage of the total scheme cost **(OECD, 1981)**. Equation 4 describes the first year of return calculation for crash reduction.

Equation 4 $FYRR_{crash\ reduction}$

FYRR$_{\text{casualty reduction}}$ calculation involves the *annual casualty reduction percentage* and the *numbers of casualties that occurred* instead of the *annual crash reduction percentage* and the *numbers of crashes.* To add to this, the equation does not take into account damage only crashes since they do not involve any injured people.

5.3.2.2 Net present value (NPV)

NPV of the measure defined is the difference between the discounted costs and benefits of a scheme, which may extent for a number of years **(PIARC, 2003).** It is the difference between the present value of benefits and present value of costs after they are discounted for twenty years, which is the standard assessment period, at the required discount rate set from the road authorities **(Dyer, 2009)**, Equation 5.

Equation 5 Net Present Value

Where,

- n=number of years,
- ,

Equation 6 Discount factor

- *r* = discount rate which is the percentage value used to discount the cash flows,
- *Cost*= value of treatment (first year) or value of maintenance cost (for each of the remaining years), and
-

Equation 7 Benefit

A positive NPV means that the project is financially acceptable because the cash coming in is greater than the cash going out after discounting **(Dyer, 2009)**. These projects are profitable since the cost equals to the value of treatment implemented and its annual maintenance, and the benefit is the value of the crashes saved.

5.3.2.3 Net Present Value/Present Value Cost

The ratio of NPV to PVC might be used for ranking measures with identical results, Equation 8 **(PIARC, 2003)**.

Equation 8 Net Present Value

The projects may be ranked, as the most profitable, from the ones that have a higher NPV/PVC value to the ones that have a lower one **(iRAP, 2009c).** In cases where a choice needs to be made between the implementation of two different measures for road improvements, NPV/PVC is better to be used as it provides reliable results.

5.3.2.4 Benefit Cost Ratio-BCR

BCR is the economic value of project's discounted benefits over the economic value of the discounted costs of countermeasures.

Equation 9 Benefit Cost Ratio

If BCR≥1 the traffic safety measure is effective, since discounted benefits are greater than discounted costs. When several measures exist, they should be arranged according to the magnitude of their benefit-cost quotients and the measures with the highest quotient should be applied until the budget is exhausted **(OECD, 1981)**.

5.3.2.5 Internal Rate of Return- IRR

IRR is the percentage discount rate value required to adjust the present values of the benefits and costs of a countermeasure, until the NPV has reached zero **(Dyer, 2009)** and NPV/BCR=1 **(PIARC, 2003)**. According to IRR criterion, the measures are effective when IRR>discount rate **(OECD, 1981)**. IRR is not good to be used for ranking projects but it is a good method of determining the discount rate **(PIARC, 2003)**. Some organisations prefer IRR because it avoids the use of a local discount rate, which can have a great effect on NPV and NPV/PVC **(PIARC, 2003)**. IRR was calculated using Microsoft Excel formula.

5.3.2.6 Economic assessment criteria

The "best" criteria, recommended by PIARC, to be used under certain circumstances are shown in Table 5.7. This Table assists in the decision making after the economic assessment results are calculated. Depending on what the road authorities are looking to achieve from the implementation of a road safety measure, the choice is made. For example, if the road authorities seek a solution which offers the highest returns in a year, then choice should be made using the FYRR.

Table 5.7 Summary of the use of decision criteria (PIARC, 2003)

	NPV	IRR	NPV/PVC	FYRR
ECONOMIC VALIDITY OF PROJECT	good	good	good	poor
MUTUALLY-EXCLUSIVE PROJECTS	very good	poor	good[1]	poor
PROJECT TIMING	fair	poor	poor	good
ROBUSTNESS TO CHANGES IN ASSUMPTIONS	good	good	very good	poor
PROJECT SCREENING	poor	good	very good	poor
FOR USE WITH BUDGET CONSTRAINTS	fair[2]	poor	very good	poor

[1] Needs incremental analysis
[2] Needs continuous recalculations

5.3.3 Crash information

The data needed to use these equations are crash data, costs of the road safety measures and the discount factor used by the road authorities for road projects. Therefore, Part B of the model was created, which involves road crash and casualty amounts that have occurred in a road section during a certain period of time, as well as the costs of each type of crash and casualty of the country where the road safety model is applied in. Figure 5.3 shows the crash and casualty information that needed to be input in the model.

This procedure completes the next three parts of the road safety model:

1. PART B where information about crashes and casualties are input together with the cost and annual maintenance of the selected road safety measures
2. PART C which provides the crash economic analysis results, and
3. PART D which provides the casualty economic analysis results

The next section shows the application of parts B to D of the model using artificial data. Once the information are input in part B then parts C and D are automatically calculated.

Crash types and treatments															
Road Name: University Road															
Area Information							Crash Information						Casualty Information			
Start Point	Finish Point	Length (km)	Width (km)	Area (km^2)	AADT (veh/day)	Discount Rate	No. of fatalities	No of seriously injured	No. of minor injured	No. of damage only	Total	No. of years of data	No. of fatalities	No of seriously injured	No. of minor injured	Total
A	B	0.1	6.5E-03	0.00065	12000	10%	1	4	4	8	17	3	1	5	9	15

Cost of crash (Euros)				Cost per casualty (Euros)				Cost of crashes/casualties (Euros)					
Fatal	Serious	Minor	Damage only	Fatal	Serious	Minor	Damage only	Cost of crashes	Cost of crashes/year	Average cost per crash	Cost of casualties	Cost of casualties /year	Av. cost per casualt.
1,574,820	185,565	18,500	1,640	1,379,340	154,980	11,955	0	1,404,200	801,400	141,424	2,261,835	753,945	150,789

Figure 5.3 Crash and casualty information

5.3.4 Application of Parts B to D of model using artificial data

The cost of the types of crashes and casualties used, was taken from the United Kingdom's 2006 crash statistic costs **(Department for Transport, 2009)**, and the discount rate for the projects was assumed to be 10%. The costs of the road safety measures were attained from various companies around the world. All the costs were transformed into Euro values and were considered representative of the Cyprus conditions.

5.3.4.1 Road safety measure costs

The costs for the road safety measures were calculated as follows:

Chevron boards are signs installed at the edge of the road, outside a bend, to allow for a clear view of the bend from the drivers, as they drive through it **(iRAP, 2010)**. Five boards were chosen to be installed on each side of the road. Each board is 1800mm long **(Advanced road signs and safety, 2011)** and costs €1000.00 to install. Maintenance costs are €400.00/year due to cars crashing on them.

Roadside safety-Barriers are installed at the edge of the road to prevent the vehicles from hitting any objects on the roadside **(iRAP, 2011)**. To install barriers on one side of the road, as the other side of the road is developed, was assumed to cost €13225.00. The maintenance is €3200.00/year due to car impact **(Barriers Direct, 2011)**.

Edge rumble strips are longitudinal lines and when a car drives on them they make it shake to warn the drivers that they stepped out of their line **(iRAP, 2011)**. Cost of installation at both sides of a road was assumed to be €900.00 and their annual maintenance cost was assumed to be €45.00/year **(Department for transport US, 2011)**. Figure 5.4 shows the second part of the model with artificial data.

Accident types and treatment																	
Street Name (University Road)																	
Area information							Crash Information						Casualty Information				
Start point	Finish point	Length (km)	Width (km)	Area (km²)	AADT (veh/day)	Discount rate	No. of fatalities	No. of seriously injured	No. of minor injured	No. of damage only	Total	No. of years of data	No of fatalities	No of seriously injured	No of minor injured	Total	No of years of data
A	B	0.1	6.50E-03	0.00065	12000	10%	1	4	4	8	17	3	1	5	9	15	3
	Cost of crash (Euros)					Cost per casualty (Euros)					Cost of crashes/casualties (Euros)						
	Fatal	Serious	Minor	Damage only		Fatal	Serious	Minor	Damage only		Cost of crashes	Cost of crashes/year	Average cost per crash	Cost of casualties	Cost of casualties /year	Average cost per casuaty	
	1,574,820	185,565	18,500	1,640		1,379,340	154,980	11,955	0		2,404,200	801,400	141,424	2,261,835	753,945	150,789	
reatments	Treatment information										Accident Types					First Year Rate of Return (FYRR)	
Safer roads	Initial Cost (Euros)	Maintenance and operating cost (Euros)	Crash reduction effectiven	Annual reduction effectiven	Casualty reductio	Annual casualty reducti	Treatment life	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off-road	Vehicle-cyclist	Vehicle-Pedestrian	FYRR Crashes (detailed method)	FYRR Casualty (detailed method)
Delineation-Chevron boards	2000	400	30%	4.29%	32.50%	4.64%	7									1717.29	1805.73
Roadside safety-Barriers	13225	3200	40%	5.71%	32.50%	4.64%	7									346.27	264.68
Rumble strips	900	45	20%	1.33%	50%	3.33%	15									1187.26	2792.39

Figure 5.4 Part B application using artificial data

5.3.4.2 Crash reduction economic assessment

The results from the economic analysis for crash reduction are shown in Table 5.8. Figures 5.5 and 5.6 show the economic assessment results for Delineation-Chevron boards. The economic analysis of each measure is carried out for the standard assessment period used by the road authorities, which is twenty years. Reapplication of the measure was considered according to the measure's lifespan, which in the chevron board's case is seven years.

			Scheme 1 (Delineation-Chevron boards)					
Discount rate	Year	Discount factor	Cost	Present value cost	Benefit	Present value benefit	Benefit-Cost	Present value
10%	0	1.0000000	€ 2.000.00	€ 2.000.00	€ -	€ -	-€ 2.000.00	-€ 2.000.00
Cost of each crash	1	0.9090909	€ 300.00	€ 272.73	€ 34,380.06	€ 31,254.60	€ 34,080.06	€ 30,981.87
€ 141.423.53	2	0.8264463	€ 300.00	€ 247.93	€ 34.380.06	€ 28.413.27	€ 34.080.06	€ 28.165.34
	3	0.7513148	€ 300.00	€ 225.39	€ 34.380.06	€ 25.830.25	€ 34.080.06	€ 25.604.85
	4	0.6830135	€ 300.00	€ 204.90	€ 34.380.06	€ 23.482.04	€ 34.080.06	€ 23.277.14
	5	0.6209213	€ 300.00	€ 186.28	€ 34.380.06	€ 21.347.31	€ 34.080.06	€ 21.161.04
	6	0.5644739	€ 300.00	€ 169.34	€ 34.380.06	€ 19.406.65	€ 34.080.06	€ 19.237.31
	7	0.5131581	€ 2.000.00	€ 1.026.32	€ 34.380.06	€ 17.642.41	€ 32.380.06	€ 16.616.09
	8	0.4665074	€ 300.00	€ 139.95	€ 34.380.06	€ 16.038.55	€ 34.080.06	€ 15.898.60
	9	0.4240976	€ 300.00	€ 127.23	€ 34.380.06	€ 14.580.50	€ 34.080.06	€ 14.453.27
	10	0.3855433	€ 300.00	€ 115.66	€ 34.380.06	€ 13.255.00	€ 34.080.06	€ 13.139.34
	11	0.3504939	€ 300.00	€ 105.15	€ 34.380.06	€ 12.050.00	€ 34.080.06	€ 11.944.85
	12	0.3186308	€ 300.00	€ 95.59	€ 34.380.06	€ 10.954.55	€ 34.080.06	€ 10.858.96
	13	0.2896644	€ 300.00	€ 86.90	€ 34.380.06	€ 9.958.68	€ 34.080.06	€ 9.871.78
	14	0.2633313	€ 2.000.00	€ 526.66	€ 34.380.06	€ 9.053.34	€ 32.380.06	€ 8.526.68
	15	0.2393920	€ 300.00	€ 71.82	€ 34.380.06	€ 8.230.31	€ 34.080.06	€ 8.158.50
	16	0.2176291	€ 300.00	€ 65.29	€ 34.380.06	€ 7.482.10	€ 34.080.06	€ 7.416.81
	17	0.1978447	€ 300.00	€ 59.35	€ 34.380.06	€ 6.801.91	€ 34.080.06	€ 6.742.56
	18	0.1798588	€ 300.00	€ 53.96	€ 34.380.06	€ 6.183.56	€ 34.080.06	€ 6.129.60
	19	0.1635080	€ 300.00	€ 49.05	€ 34.380.06	€ 5.621.41	€ 34.080.06	€ 5.572.36
	20	0.1486436	€ 300.00	€ 44.59	€ 34.380.06	€ 5.110.38	€ 34.080.06	€ 5.065.78
	21	0.1351306						
	22	0.1228460						
	23	0.1116782						
	24	0.1015256						
	25	0.0922960						
				€ 5.874.10		€ 292.696.83		€ 286.822.73
			FYRR					1717%
			Net Present value					€ 286,823
			NPV/PVC					48.8
			BCR=PVB/PVC					49.8
			IRR					1704%

Figure 5.5 View of economic assessment calculation of Delineation-Chevron boards Part C

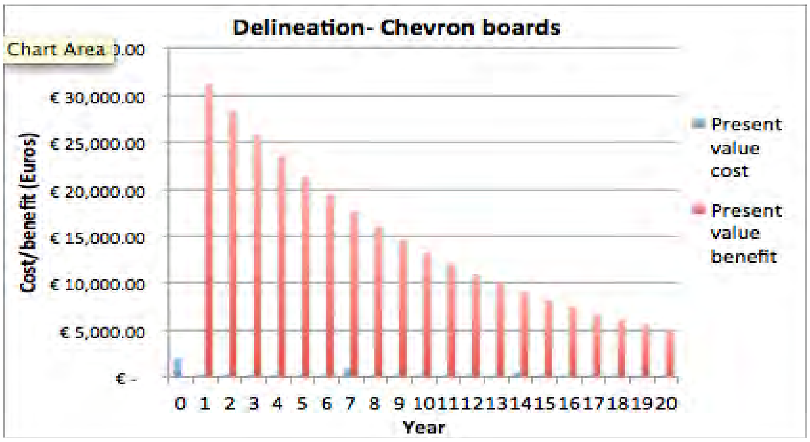


Figure 5.6 Present value cost and benefits of delineation Chevron boards

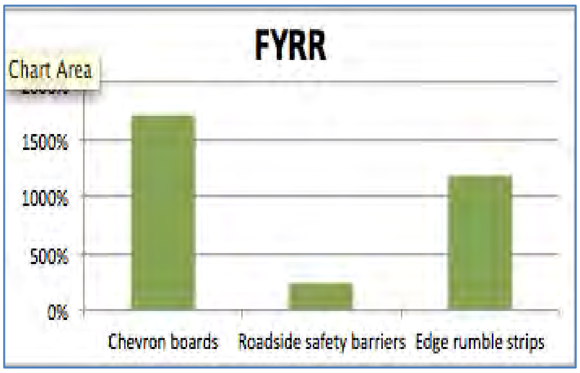


Figure 5.7 FYRR crash results

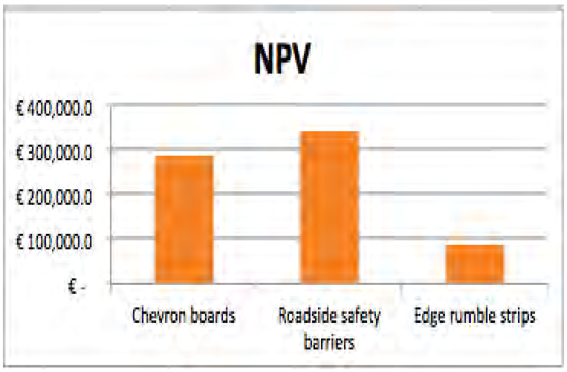


Figure 5.8 NPV crash results

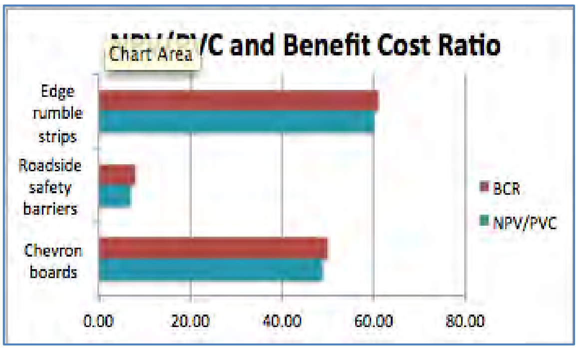


Figure 5.9 NPV/PVC and BCR crash results

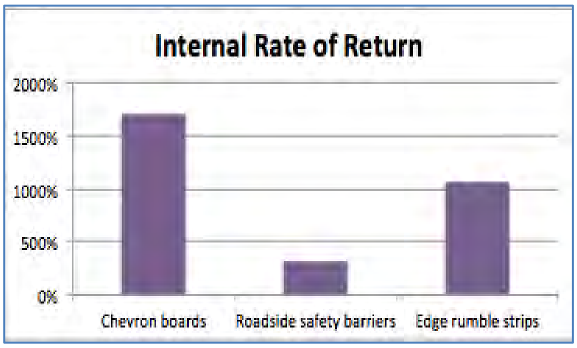


Figure 5.10 IRR crash results

Figures 5.7 to 5.10 show the economic assessment results for each road safety measure and Table 5.8 shows the measures that give the most advantageous results in each equation. As it may be seen, Chevron boards bring the highest returns in the first year of implementation, (Figure 5.7), and needs the highest discount rate in order for discounted costs and benefits to be equal (Figure 5.10). Additionally, roadside safety barriers provide the highest difference between benefits and costs in the long run, (Figure 5.8), which means that they bring the highest benefits. Alternatively, road edge rumble strips provide the highest NPV/PVC and BCR values. Decisions can then be made from the road authorities by following the decision criteria given in Table 5.7.

Table 5.8 Crash reduction economic assessment: scheme selection- model output

Selection of Scheme		
FYRR	1717%	Delineation- chevron boards
NPV	€ 340,813	Roadside safety barriers
NPV/PVC	60	Edge rumble strips
BCR	61	Edge rumble strips
IRR	1704%	Delineation- chevron boards

5.3.4.3 Casualty reduction economic assessment

The economic assessment results for casualty reduction are shown in Tables 5.9 and 5.10 and the calculations for the delineation-Chevron boards are shown in Figure 5.11. The results indicate clearly that road edge rumble strips are the most suitable option to be used if a road authority wants to decrease the casualties in a road. Whereas the most profitable option is the implementation of Chevron boards.

			Scheme 1 (Delineation-Chevron boards)					
Discount rate	Year	Discount factor	Cost	Present value cost	Benefit	Present value benefit	Benefit-Cost	Present value
10%	0	1	€ 2,000	€ 2,000	€ -	€ -	-€ 2,000	-€ 2,000
Cost per casualty	1	0.909	€ 300	€ 273	€ 20,990	€ 19,082	€ 20,690	€ 18,809
€ 150,789	2	0.826	€ 300	€ 248	€ 20,990	€ 17,347	€ 20,690	€ 17,099
	3	0.751	€ 300	€ 225	€ 20,990	€ 15,770	€ 20,690	€ 15,545
	4	0.683	€ 300	€ 205	€ 20,990	€ 14,336	€ 20,690	€ 14,131
	5	0.621	€ 300	€ 186	€ 20,990	€ 13,033	€ 20,690	€ 12,847
	6	0.564	€ 300	€ 169	€ 20,990	€ 11,848	€ 20,690	€ 11,679
	7	0.513	€ 2,000	€ 1,026	€ 20,990	€ 10,771	€ 18,990	€ 9,745
	8	0.467	€ 300	€ 140	€ 20,990	€ 9,792	€ 20,690	€ 9,652
	9	0.424	€ 300	€ 127	€ 20,990	€ 8,902	€ 20,690	€ 8,775
	10	0.386	€ 300	€ 116	€ 20,990	€ 8,092	€ 20,690	€ 7,977
	11	0.350	€ 300	€ 105	€ 20,990	€ 7,357	€ 20,690	€ 7,252
	12	0.319	€ 300	€ 96	€ 20,990	€ 6,688	€ 20,690	€ 6,592
	13	0.290	€ 300	€ 87	€ 20,990	€ 6,080	€ 20,690	€ 5,993
	14	0.263	€ 2,000	€ 527	€ 20,990	€ 5,527	€ 18,990	€ 5,001
	15	0.239	€ 300	€ 72	€ 20,990	€ 5,025	€ 20,690	€ 4,953
	16	0.218	€ 300	€ 65	€ 20,990	€ 4,568	€ 20,690	€ 4,503
	17	0.198	€ 300	€ 59	€ 20,990	€ 4,153	€ 20,690	€ 4,093
	18	0.180	€ 300	€ 54	€ 20,990	€ 3,775	€ 20,690	€ 3,721
	19	0.164	€ 300	€ 49	€ 20,990	€ 3,432	€ 20,690	€ 3,383
	20	0.149	€ 300	€ 45	€ 20,990	€ 3,120	€ 20,690	€ 3,075
	21	0.135						
	22	0.123						
	23	0.112						
	24	0.102						
	25	0.092						
				€ 5,874		€ 178,698		€ 172,824
			FYRR					1805%
			Net Present value					€ 172,824.1
			NPV/PVC					29.42
			BCR=PVB/PVC					30.4
			IRR					1034%

Figure 5.11 View of economic assessment calculation of Delineation-Chevron boards Part C

Table 5.9 **Economic assessment for casualty- model outputs**

FYRR	FYRR	NPV	NPV/PVC	BCR	IRR
Delineation-Chevron boards	1805%	€ 172,824.1	29.4	30.4	1034%
Roadside safety barriers	264%	€ 130,445.5	2.7	3.7	134%
Edge rumble strips	2792%	€ 126,759	85.2	86.2	1669%

Table 5.10 Economic assessment for casualty: scheme selection- model outputs

Selection of Scheme		
FYRR	2792%	Edge rumble strips
NPV	€ 172,824.1	Delineation-Chevron boards
NPV/PVC	85.2	Edge rumble strips
BCR	86.2	Edge rumble strips
IRR	1669%	Edge rumble strips

5.3.5 Future crash and casualty evaluation

The final part of the model involves the calculation of the crash and casualty effectiveness of the selected road safety measure. This part of the model enables the authorities to evaluate the efficiency of the implemented measures according to the road network condition in Cyprus. This is carried out by entering crash and casualty data for a year after implementation of the road safety measure. The model calculates the money saved and the annual casualty and crash effectiveness of the measure.

5.3.5.1 Application of Part E of model using artificial data

Using the same artificial data set, the last part of the model was tested. The only data needed to carry out Part E is crash and casualty numbers of the years after the model is implemented for the road section in question. In this case the artificial data was input, and the results are shown in Figure 5.12. From the results, it may be seen that the crashes in the area have decreased by 58.8% in the first three years of implementation and casualties have reduced by 80%. At the end of the model's lifetime, the crashes have decreased by 17.6%, saving €1,593,799.00 to the road authorities, and the casualties have decrease by 40%, saving the road authorities €1,580,970.00.

Year	Crashes				Casualties			Cost of crashes	Cost of edge rumble strip implementation	Cost of casualties	Crash amount	Crash reduction effectiveness since measure implementation	Annual crash resualty reduction effectiveness	Casualty amount	Casualty reduction effectiveness since measure implementation	Annual casualty reduction effectiveness
	Fatal	Serious	Minor	Damage only	Fatal	Serious	Minor									
Years -1 to-2	1	4	4	8	1	5	9	€ 2,404,209.00		€ 2,261,835.00	17			15		
Av of years 0 to -2	0.33	1.33	1.33	2.67	0.33	1.67	3.00	€ 801,403.00		€ 753,945.00	5.7			5.00		
Year 1	0	0	1	1	0	0	1	€ 20,140.00	€ 900.00	€ 11,955.00	2.0	64.7%	64.7%	1.00	80%	80%
Year 2	0	1	0	2	0	1	0	€ 188,845.00	€ 45.00	€ 154,980.00	3.0	47.1%	-50.0%	1.00	80%	/
Year 3	0	0	1	1	0	0	1	€ 20,140.00	€ 45.00	€ 11,955.00	2.0	64.7%	33.3%	1.00	80%	0%
Years 1-3	**0**	**1**	**2**	**4**	**0**	**1**	**2**	**€ 229,125.00**	**€ 990.00**	**€ 178,890.00**	**7.0**	**58.8%**	**19.6%**	**3.00**	**80%**	**27%**
Year 4	0	0	0	0	0	0	0	€ -	€ 45.00	€ -	0.0	100.0%	100.0%	0.00	100%	100%
Year 5	0	2	0	0	0	2	0	€ 371,130.00	€ 45.00	€ 309,960.00	2.0	64.7%	/	2.00	60%	/
Year 6	0	1	0	2	0	1	1	€ 188,845.00	€ 45.00	€ 166,935.00	3.0	47.1%	-50.0%	2.00	60%	0%
Year 7	0	0	1	1	0	0	2	€ 20,140.00	€ 45.00	€ 23,910.00	2.0	64.7%	33.3%	2.00	60%	0%
Years 1-7	**0**	**4**	**3**	**7**	**0**	**4**	**5**	**€ 809,240.00**	**€ 1,170.00**	**€ 679,695.00**	**14**	**17.6%**	**2.5%**	**9.00**	**40%**	**6%**
Cost per crash type	€ 1,574,829	€ 185,565	€ 18,500	€1,640	€ 1,379,340	€ 154,980	€ 11,955	€1,594,969		€1,582,140						
Money saved in 3 years (money saved from crashes minus measure implementation and annual maintenance)								€ 2,174,094.00		€ 2,081,955.00						
Money saved in 7 years (money saved from crashes minus measure implementation and annual maintenance)								€ 1,593,799.00		€ 1,580,970.00						

Figure 5.12 Future evaluation after implementation of edge rumble strips –artificial data

5.4 Data needs of the model

The model was examined to obtain the data needed to carry out a road safety analysis for a road section. Table 5.11 shows the data needs with regard to each part of the model, and Table 5.12 shows the data needs in more detail.

Table 5.11 Data needs of road safety model

Part	Data required
Part A: road safety measure evaluation	Crash type information Requirements of road authorities Area Information (Road Inspections)
Part B: road safety measure cost crash/casualty cost	Discount rate Information about road section dimensions Number of crashes/casualties Number of years of data Cost of crashes/casualties Implementation and annual maintenance costs of road safety measures
Part C: Crash economic assessment	-
Part D: Casualty economic assessment	-
Part E: Future evaluation of results	Future annual crash data

Table 5.12. Data needs of model

Data	Unit	Data	Unit
Road Safety measures		**Types of crashes that occur**	
Already used in the county	Names	*Intersections*	Number
Cost	€	*Head-on*	Number
Effective life	Years	*Manoeuvring*	Number
Annual maintenance costs	€	*Rear-end*	Number
Operating costs (if any)	€	*Rear-end*	Number
Side effects-disadvantages	Text	*Run off-road*	Number
Discount rate	%	*Vehicle - Cyclist*	Number
Crash Value (all types)	€	*Vehicle - Pedestrian*	Number
Casualty value (all types)	€		
Data	**Unit**	**Data**	**Unit**
Safer people		**Area characteristics**	
Motor vehicle standards		*Area type*	Text
Alcohol/drug measures	Text	*Functional class of roadway*	Text
Child safety	Text	*Vehicle volume, AADT*	veh/day
Education	Text	*Speed limit*	km/hr.
Emergency response	Text	*Number of lanes*	Number
Driver fatigue management	Text	*Length*	meters
Helmet and protective clothing	Text	*Width*	meters
Licensing	Text		
Policing	Text		
Data	**Unit**	**Data**	**Unit**
Historical crash data		**Road data (from road inspection)**	
Fatal	Number	Aggressive obstacles	Text
Serious	Number	Existing road safety measures per 100m or 1km	Text/ Number
Minor	Number	Drainage	Yes/No
Damage only	Number	Trees	Yes/No
Years of data	Years	Cuts/Embankments	Yes/No
Severity outcome (KSI)	Number	Safety zone width	meters

5.5 Summary

This Chapter has described the model developed and how it was tested using simulated data. The model is separated into five parts that involve a selection from a variety of road safety measures that are suitable for the road network under scrutiny, the input of road characteristics, the amount and cost of crashes and casualties in order for an economic assessment to be carried out, and an assessment of the future annual effectiveness casualty reduction.

The model developed, is able to carry out: a selection amongst measures for recorded road safety hazards according to different road traffic characteristics, an economic analysis that can assist in the choice of the economically optimum road safety measure, as well as, calculation of the crash and casualty effectiveness of the selected measure in the area.

The next Chapter seeks to describe the detailed data needs and data collection carried out, to examine the applicability of the road safety model described in this Chapter to the road network of Cyprus.

Chapter 6:

Data gathering and analysis

6 DATA GATHERING AND ANALYSIS

6.1 Introduction

This Chapter collates and synthesises data collected from the road authorities in Cyprus, which is required for the model. In order to apply the Road Safety Model created to a country's road network; the data mentioned in Table 5.12 needs to be incorporated in the road safety model. Before applying the model, it is believed that an understanding of the condition of road safety in the country, as well as, the actions taken by the road authorities need to be examined. This required the collection of additional data.

By examining the data needs of the road safety model created, and by following a preliminary investigation of the data available in Cyprus, described in Chapter 3, the following data were considered to be necessary for collection:

- The types of road safety measures currently applied in the country together with their initial and annual maintenance costs,
- Hazardous road sections where a number of crashes have occurred in the past years. For these sections the data needed include: area description, crash data for a minimum number of three years, the road safety measures that already exist in the area, and any hazards that exist.
- Cost of the crashes and casualties in Cyprus.
- The discount rate used for governmental projects

These data could be collected from a number of sources as follows:

a. Ministry of Communications and Works
b. Police
c. Road inspections
d. Other

Appendix B contains a Table with the all the data required by the model, as well as, additional sources used to acquire the data in cases where they were not available.

6.2 Selection of areas to study

To find the roads with the highest crash statistics, all the crashes that have occurred in the past three-five years should be categorised in various ways to enable the identification of where, when and to whom the major crashes occur **(OECD, 1981)**. In this work, the choice of the areas to study has not been based on statistical analysis but on the empirical views of the officials from Cypriot Police crash statistics department.

The chosen road sections are Stasinou-Salaminos Avenue of 1.8km long and Griva Digeni Avenue of 4.2km long, as they have been two of the most dangerous road sections in Cyprus's capital, Nicosia **(Menelaou, 2010)**. Whilst the choice of the areas may not ideal, as they have had less than 20 crashes in the past 3-5 years as RAP organisations require (see Section 4.2), but this was felt to be the optimal choice given the time constrains of the research and taking into account the country's length and population, to identify a representative area of the Cypriot road network. Both roads are U types of roads, where 65% of fatal and almost 80% of serious injuries have occurred in 2010 (see Table 3.4).

The crash statistics involve fatal and seriously injured crashes that occurred between 2007-2009. Three years of data are required to be collected to obtain an average of the crashes that occur in an area and to allow for a treatment's effectiveness to be calculated, as sometimes, there might already have been a decrease in the crashes in that area due to other reasons such as road user behaviour.

6.3 Data from Ministry of Communications and Works

The head of the Road Safety Department of the Ministry of communications and works was contacted to obtain the following data **(Morfakis, 2009):**

1. Information about the current state of the road safety in Cyprus and how the road safety inspections are being carried out.
2. The road safety measures recommended to be applied by the Road Safety Strategic Plan 2005-2010, and
3. The cost of the road safety measures that have already been applied between 2007 and 2010.

The data was collected using a questionnaire, which is given in Appendix C. The questionnaire is divided into 3 parts, which concern general information about the road crashes that occur in Cyprus and how both data collection and road inspections are carried out. Some of the information provided from the questionnaire may be found in Table 6.1 and data regarding the current status of road safety in Cyprus is given in Section 3.2.

6.3.1 Road safety inspection procedure by Cypriot road authorities

The Public Works Department carries out road inspections in Cyprus by firstly obtaining annual road crash statistics and road crash maps from the police. These data are inspected to identify black-spots, and this is the main method of identifying hazardous areas. Road inspections are carried out in these areas before any road safety measures are applied to them. They are generally carried out using a road inspection vehicle which checks for hazards in motorways, dual carriageways and roads outside urban areas. More information about road inspections and the Ministry of Communications and Work's may be found in Appendix C.

6.3.2 Measures used in Cyprus and their cost

The road safety measures used in Cyprus may be divided with regard to:

- Road environment
- Drivers and vehicles
- Policing
- Traffic road safety education, and
- Immediate care

These were separated into three sections, as the Model requires: safer roads, safer vehicles and safer people. The information acquired was combined and shown Tables 6.1-6.3. In most of the cases, the budget allocated was not found in the data given.

6.3.2.1 Safer roads

Table 6.1 Road safety measures used for safer roads in Cyprus **(Colin Butchanan Consortium, 2001 and MCW 2007-2010)**

Safer roads		Budget allocated
Black-spot identification	Black spot treatment is the main method used for treating the road network in Cyprus. The road safety measures are not described analytically in the data provided.	€1,258,950/ year
Pedestrian zebra crossings	Money allocated from a different budget	/
Traffic light installation with pedestrian Pelican crossings	Money allocated from a different budget	/
Road safety barriers	Money allocated from a different budget	/
Crash cushions	Money allocated from a different budget	/
Lightening of road	Money allocated from a different budget	/
Delineation	Money allocated from a different budget	/
Road safety measures in municipalities		€1,258,950/ year
Pedestrian road pavement construction and maintenance		From above budget
Blackspot treatment		From above budget
Street lighting and their maintenance		From above budget
Road humps and their signalling		From above budget
Tree cutting/pruning		From above budget
Other traffic calming measures		From above budget

Road safety measures in communities and provinces		€1,258,950/ year
Street lighting and their maintenance		From above budget
Blackspot treatment		From above budget
Road humps and their signalling		From above budget
Tree cutting/pruning		From above budget
Safety barriers		From above budget
Other traffic calming measures		From above budget
Raised junctions		/
Road signs		/
Change speed limit		/
Parking creation and control		/
Underground and over ground pedestrian bridge		/
Clean of road pavement to enable friction		/

6.3.2.2 Safer Vehicles

Table 6.2. Road safety measures used for safer vehicles in Cyprus **(Colin Butchanan Consortium, 2001 and MCW 2007-2010)**

Safer vehicles		Budget allocated
Daytime running lights	Laws for motorcycles but not yet any laws for vehicles	/
New car assessment programme (NCAP)	According to NCAP, technical checks of construction specifications are carried out	/
Motor vehicle standards	Passive safety of vehicle check Standards on protective equipment and airbags Pedestrian recognition systems	€230,000
Used car safety ratings	Vehicle safety (airbags, children seats etc.) Support vehicle sellers to promote safer vehicles	/
Vehicle features and devices	Enhancement of vehicle technical controls Mandatory fittings for ABS and automatic seatbelt and headlamp Pedestrian recognition systems Training of staff Vehicle safety (airbags, children seats etc.)	/
Vehicle road worthiness	Systematic check inspections New law provisions for systematic checks Automated MOT system Training of staff Old vehicle replacement	/
Safe Bicycle Use	Decrease VAT for	/

	motorcycle/moped/bicyclist helmets	
Safe heavy and public transport vehicle use	Speed cutters, Tacographs and protective bars for heavy vehicles Road check units Safe heavy vehicle books Equipment control and safety of public service vehicles	€230,000
Safe motorcycle use	Roadworthiness of motorcycles Decrease VAT for motorcycle/ moped/ bicyclist helmets	/

6.3.2.3 Safer people

Table 6.3 Road safety measures for safer people used in Cyprus **(Colin Butchanan Consortium, 2001 and MCW 2007-2010)**

Safer people		Budget allocated
Policing budget		€1,340,000
Police education	Training of officials on matters that concern road safety measures abroad Training of police	€17,000
Law enforcement	Overtime of police patrols during weekends	€595,000
Speed control	Speed control machines (€5,100/each)	€5,100
Addressing drug and alcohol use	Lower BAC limit Specially adapted Alco test mobile units (€42,500/each) Alcotest machines (€5,100/each) Alco test mouthpieces (10p each) Narcotest devices	€64,600
Seatbelt wearing	Seatbelt wearing on all seats of vehicle	/
Education	Modules at primary schools CDs to be provided with books at schools Training of teachers Competitions Primary school workshops	€34,400
Educational presentations	Presentations at schools, army bases and to the general public Projectors (€2000/each)	€33,000
Child safety initiatives	Child safety enlightening material Child seats	/
Fatigue management	Advertisement	/
Emergency response	Create ambulance calling centre Increase the emergency ambulance stations Introduction of rescuers institution Training programme for ambulance rescuers Ambulance GPS system	/
Helmet and protective clothing	Helmet is necessary for all motorcycle/moped users. Protective clothing is necessary for professional drivers	/
Licensing	Upgrade of driving licence examination to	€300,000

	point allocation and computerised testing on theoretical knowledge Minimum hours of lessons Renewal of driving licence for older people Check training levels regularly Stricter and frequent examinations for driving instructors. Also lectures about behaviour	
Leaflets/Newsletters	Road safety at schools Posters for preschools Reprinted enlightening material	€24,500
Publicity	TV, Cinema and Radio advertisements Road safety park Participation in Cyprus national fair	€904,400
Confiscation of illegally parked vehicles	Speedometers	
Helmet and seatbelt wearing for all vehicle passengers	Breadth analyser units	
	Street patrolling units weekends	
Point demerit system	Enlightening campaigns	
Seatbelt for all seats in all vehicles	Road safety video spots in cinemas	
Breach a red light at junction devices	Annual road safety week	
Police staff education	Seminars	
Road safety information and material on Cyprus's fair	Road safety seminars	
Campaigns, advertisements and lectures	Driver education in schools	
Lectures at schools	Road safety leaflets in other languages	
Encourage good driving culture by creating target groups	Produce code of road safety in other language for foreigners	
Increase road safety awareness at workplace	Protect VRUs	

As it may be seen from Tables 6.1-6.3, the data do not offer a detailed description of the measures used by the Cypriot authorities or the costs for all the measures used to achieve safer vehicles and safer conditions for people. Therefore, the missing costs from the road safety measures mentioned in the road safety model created were obtained from supplementary sources, as described in Appendix B.

6.4 Data from the Police

The following information was collected from the head of road statistics department of the police. These were collected with the help of a questionnaire, (see Appendix D):

1. Road safety measures used and being considered for future implementation by the Police.
2. Road crash data for Stasinou-Salaminos and Griva Digeni Avenues
3. Road area maps

The following sections present the above information for the road sections under investigation.

6.4.1 Road safety measures used

The road safety measures that the Cypriot police apply, mainly concern the behaviour of the road users, especially the drivers. The main measures that are currently being applied are given in Table 6.4. The answered questionnaire may be found in Appendix D.

Table 6.4 Police measures used in Cyprus **(Colin Butchanan Consortium, 2001 and MCW 2007-2010)**

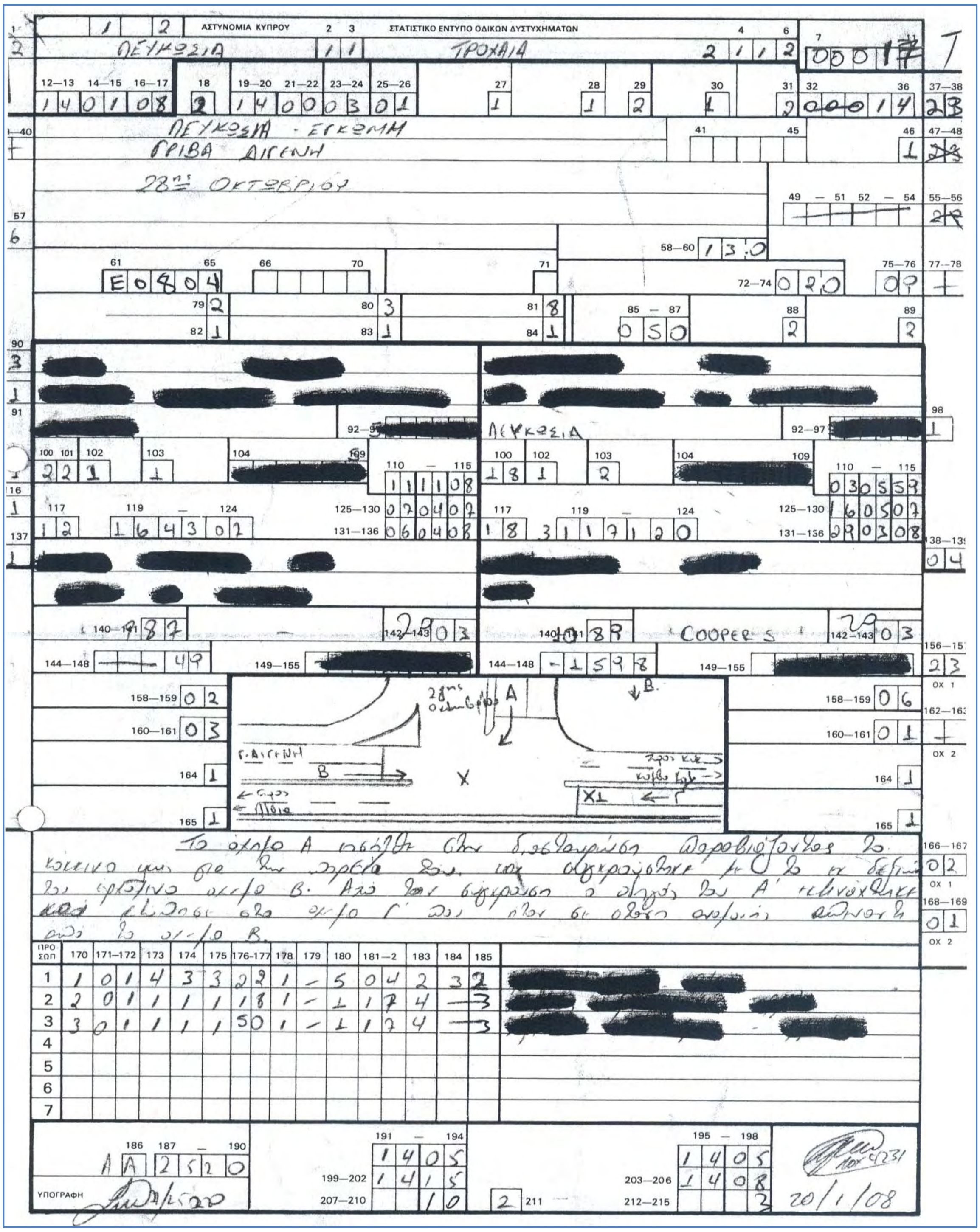
Measure	Description
Police education	Presentations are given to schools and army bases
Law enforcement	More expensive fines Zero alcohol limit for professional drivers
Speed control **Addressing drug and alcohol use** **Seatbelt wearing**	Police sets road patrols to the different routes that connect people to places where clubs, alcohol, and drugs exist. Especially in weekends. The problem with alcohol has been increasing and a reason for that is that Alco-tests started taking place in the past five years Zero alcohol limit for professional drivers is going to be applied In the future, testing for drug use is also going to be applied. Moreover, Alco-lock for heavy and work vehicles are thinking to be implemented but results from other countries need to be obtained first.
Educational presentations	To trespassers of the law. If they follow the lectures, trespassers will have some penalty points removed.

Child safety initiatives	Traffic wardens at schools Educational presentations Leaflets to parents at school No child should be seated at the front of a moped/motorcycle
Fatigue management	Advice not to drive when tired. No law
Emergency response	The time the police/ambulance receives a call and the time police arrives at the scene are recorded in the crash statistics form. Since ambulances and police vehicles are not digitalised the times are not trustworthy as they depend on the honesty of the people who fill the form
Helmet and protective clothing	For motorists there are laws that require them to wear a helmet but a law for protective clothing does not exist.
Publicity	A different campaign is taking action every month, each lasting for 15days. The effectiveness is measured annually and they are expensive. European campaigns are also taking place. Advertisements are also expensive
Leaflets/newspapers	Trying to inform the public
Licensing	Criteria for driving instructors Requirements for driving licence Examination level
Old and used vehicles	Both types are checked for MOT tests and advices are given to the drivers of these cars if there a problem is observed.
Police education	The police is trained and informed on new measures that exist

6.4.2 Crash data collection procedure by Police

General Procedure

When the police receive a call that concerns a crash, they first inform the ambulance services, if not already informed, and they then attend the crash scene where the necessary data is recorded as follows. The police complete a crash statistics form shown in Figure 6.1, and record the crash position on a paper map of the area **(Menelaou, 2010)**. Both them are given to the police's Crash Analysis Department who are responsible for campaigns and to the Ministry of Public Works, who are responsible for road maintenance and black spot analysis. The form and its definition May be found in Appendix E.1.


ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΥΠΟΓΡΑΦΗ

Figure 6.1 Cyprus' Crash Statistics form

Using the above procedure the road crash data for the above road sections under consideration were collected. The crashes analysed were also recorded on road maps to identify whether the crashes are concentrated in specific areas. These may be seen below. Additionally, the crash data forms collected may be seen in Appendix F, which also contains the translated and decoded version.

Case Study 1: Stasinou- Salaminos Avenue

Table 6.5 Crash analysis of Stasinou - Salaminos Avenue

Case study 1: Stasinou - Salaminos Avenue						
Road Name	Stasinou- Salaminos					
Road length	1780m					
Area type	Urban Area					
Functional class of roadway	Collector and minor arterial					
Speed limit	50km/hr.					
Vehicle volume	5000-10000 veh/day					
No. of lanes	Double carriageway					
Crash number	18					
Crashes	17 Serious injuries	1 Fatality				
People involved in crashes	7 pedestrians	1 cyclist	6 motorcyclists	4 car occupants		
Casualties	24 people					
People involved in crashes	7 pedestrians	1 cyclist	5 motorcyclists	11 car occupants		
Vehicles involved	28					
Types of vehicles involved	19 Saloon Cars	1 Taxi	7 Motorcycles	1 Bicycle		
Movement chart of pedestrians and vehicles	4 from angle	5 pedestrians crossing the road	2 rear-end	1- still object	3 manoeuvres	1 other
Crash types (as required by model)	Head on: 0 Intersection: 9 from which 5 occurred when vehicles were turning Lane change: 2 Manoeuvring: 6 Rear-end: 2 Run off road: 2 Vehicle-Pedestrian: 7 Vehicle-Cyclist: 1					
Average lane width	14m					
Average ped. pavement width	2.4m					
Actions of vehicles to cause crash	Careless driving: 3	Careless right turn: 5	Disobeyed to keep right distance: 2	Disobeyed traffic lights: 1	Manoeuvres: 3	Pedestrian crossed careless: 1
Crash type	4 from angle	1 bicyclist	7 pedestrians	1 rear end	1 fixed object	2 other	2 side
Damages on car from first impact	14 Front	1 Rear	4 Door	8 Wing	1 none	
Traffic lights	5 at traffic lights					
Lane separator	None other than delineation					
Lighting	Good					
Road pavement condition	Dry. 1 crash occurred when road surface was wet					
Driving licence	3 with no driving licence					
Drugs and alcohol	10 Negative	27 not requested	2 Unknown			
Helmets/ Seatbelt	2 none					

Figure 6.2 Crashes occurred in Stasinou – Salaminos Avenue between 2007-2009

Each dot in Figure 6.2 represents a crash that has occurred in Stasinou – Salaminos avenue. The avenue was divided into links of 100m sections, apart from the last one that was 80m. From the crash data provided and from the calculations presented in Chapter 4, the risk map of the area was calculated and is presented in Figure 6.3 and Table 6.6 which shows Stasinou- Salaminos road section to be a high risk road section.

Table 6.6 Risk mapping calculation for Stasinou - Salaminos

Road section	Collective Risk			Personal Risk		
	Value	Risk		Value	Risk	
Stasinou-Salaminos	3.33	High risk		304.4	High risk	

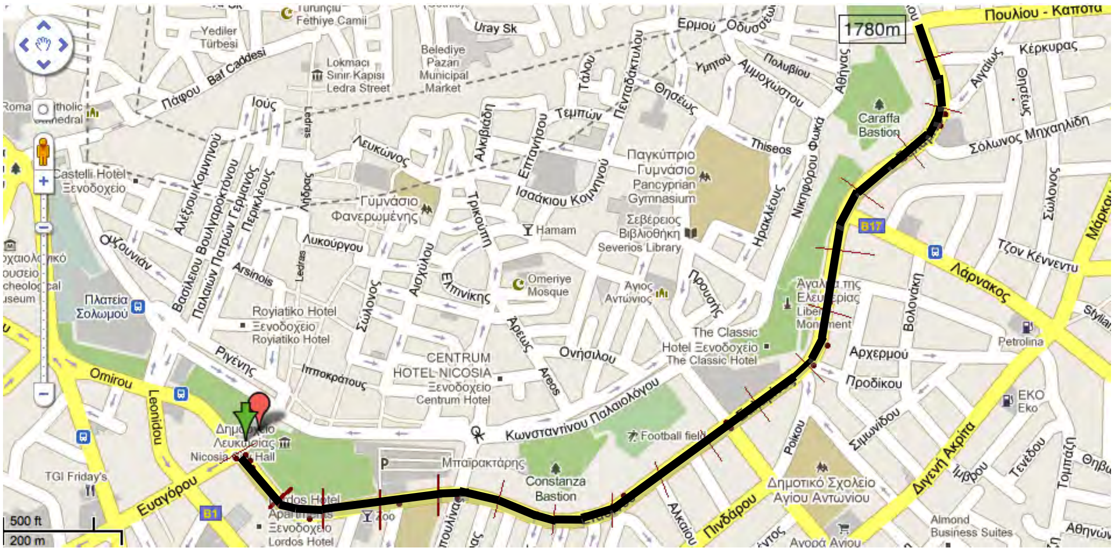


Figure 6.3 Risk map for Stasinou-Salaminos Avenue

Case study 2: Griva Digeni Avenue

Table 6.7 Crash analysis for Griva Digeni Avenue

Case study 2: Griva Digeni Avenue							
Road name	Leoforos Griva Digeni						
Area type	Urban area						
Functional class of roadway	Collector and minor arterial						
Speed limit	50km/hr.						
Vehicle volume	5000-10000 veh/day						
Number of lanes	Double carriageway						
Residential area?	Yes						
Road description	Mostly straight and flat						
Lane separator	Road safety median barrier and median kerb						
Crash number	17						
Fatal crashes	4						
Serious crashes	13						
Number of casualties	20						
Casualties	13 M/cyclists	1 bicyclist	3 car occupants	3 pedestrians			
Types of casualties	4 Fatal	15 Serious	1 minor				
Vehicles involved	32						
Types of vehicles involved	12 M/cycles	18 Saloon cars	1 bicycle	1 pick up			
Movement chart of ped and vehicles	8 angular	3 pedestrian	2 on still item	1 manoeuvres	2 diversions	1 other	
Crash types (as required by model)	Head on: 0 Intersection: 9 Lane change: 5 Manoeuvring: 8 Rear-end: 1 Run off road: 3 Vehicle-Pedestrian: 3 Vehicle-Cyclist: 1						
Average lane width	6.8m/lane						
Average road pavement width	2m at each side of pedestrian pavement						
Lane separator	Median road safety barriers and kerbs						
Crashes and lane separators	11 occurred where delineation was the lane separator	6 occurred in road subsections where lane separator exists					
Actions of vehicles to cause crash	Illegal direction of travel: 4	Careless driving/ distraction: 5	Careless turn to the right: 1	Disobeyed automatic traffic signal: 4	Exceeding speed limit: 3	Failure to give right of way: 2	Pedestrian crossing (not being masked by vehicle): 2
Traffic lights	7 crashes occurred at traffic lights						
Lighting conditions	Good	6 crashes occurred at night with good lighting conditions					
Crash type	Angular: 7	Pedestrian: 2	Side collision: 2	Run off road: 6 (3 median barriers, 1 lamp post, 1ped pavement, 1 other)			
Damages on car on first impact	Front: 12	Rear: 2	Doors: 7	Wings: 9	None: 1		
Helmet/ Seatbelt	1 not wearing seatbelt						
Drugs and alcohol	Not requested: 16	Negative: 18	Positive: 1				

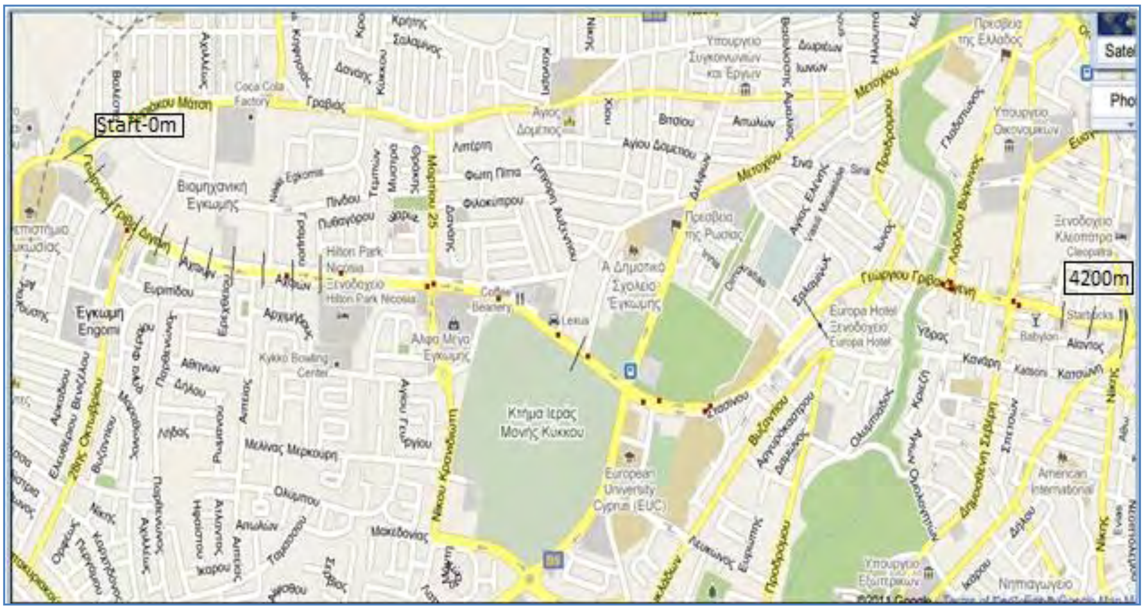


Figure 6.4 Crashes occurred in Griva Digeni Avenue between 2007-2009

Figure 6.4 shows the crashes that have taken place in Griva Digeni Avenue, which is 4200m long, represented by a dot. The avenue was divided into 100m sections for the first kilometre, and then into 1000m for the rest of the sections, to check the impact of collecting data at different intervals. The last 200m were separated in 100m sections. Table 6.8 and Figure 6.5 provide the risk mapping of Griva Digeni Avenue.

Table 6.8 Risk mapping calculation for Griva Digeni Avenue

Road section	Collective Risk			Personal Risk		
	Value	Risk		Value	Risk	
Griva Digeni	1.35	High risk		137.3	High risk	

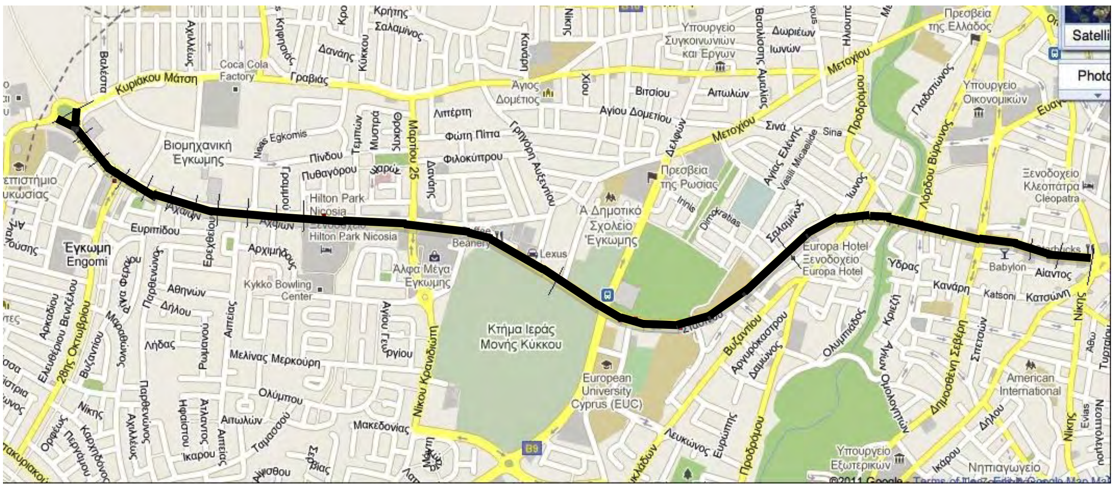


Figure 6.5 Risk map for Griva DIgeni Avenue

6.5 Road Inspections

The remaining information, concerning the features of the road network, was obtained from manual inspection. As mentioned in section 6.1, road inspections were carried out using a standard passenger car, as it was difficult to acquire a specially equipped vehicle. A video camera and a photo-camera were also used, (see Figure 6.6), to help acquire any missing information after the inspection and to identify the difficulties a driver faces when driving in the road. The camera was adjusted to record the middle of the road. By using the vehicle's odometer, (see Figure 6.7), the length of the road sections was confirmed. Moreover, information for every 100m or 1kilometer was taken.

Figure 6.6 Equipment used for road inspection

Figure 6.7 Taking measurements of the road length using the vehicle's odometer.

After recording the measurements, the videos and pictures were examined to record measurements of the road sections. Measurements were taken for both sides of the road and the data collection forms are shown in Tables 7.01 to 7.08 in Appendix G. The information gathered is summarised in Tables 6.9 and 6.10 below.

Table 6.9 Stasinou - Salaminos Avenue road inspection summary

Avenue	Stasinou - Salaminos	Salaminos - Stasinou
Area	Urban	
Road type	Collector and minor arterial	
Speed limit	50km/hr.	
No. of lanes	2 on each side	
Road length	1800m	
Average road width	14.2m	
Average pedestrian pavement width	2.4m	
Visibility condition	Good	
Existing drainage	Good	
Vertical realignment	Good but mostly left turns	Good but mostly right turns
Road section	Wide	Wide
Banks/Embankments	No	No
Hatching	No	No
Road markings	Yes some not clear	Yes some not clear
Delineation	Poor in most of the road	Poor in most of the road
Pedestrian railings	First 500m	Yes last 10m
Lighting conditions	Energy absorbing lights	
Median separator	Nothing apart from delineation	
Double yellow line at edge	Yes	
Bicycle/Bus lanes/lay-bys	No	No
Crash Cushions	No	No
Road safety barriers	Railings in first km	None
Bus stops	Every 300m (6)	Every 300m on average (6)
Bollards	800m	400m
Cat's eyes	300m	300m
Speed cameras	No	No
Warning signs	Yes	
Direction signs	Yes	
Signs giving orders		
Information signs	Yes	
Trees	On pedestrian pavement	
Shoulder sealing	0.3m	
Traffic lights	7	7
Pedestrian barriers	Yes 1st km and last 100m Bollards and railings	200m
Pedestrian crossing	7	
Secondary roads	7 not clear	7 not clear
Problems identified	No speed limit signs after each junction Too many intersections on right hand sight when travelling from Stasinou to Salaminos avenues (20 + 8 entrances to shops and petrol stations)	

Table 6.10 Griva Digeni Avenue road inspection summary

Avenue	Griva Digeni Roundabout to Starbucks	Griva Digeni Starbucks to roundabout
Area	Urban	
Road type	Collector and minor arterial	
Speed limit	50km/hr.	
No. of lanes	2 on each side	
Road length	4200m	
Average road width	12m	
Av. ped. pavement width	2m	
Visibility condition	Good	
Existing drainage	Good	
Vertical realignment	Mostly straight	Mostly straight
Road section	Normal	Normal
Banks/Embankments	300m after ped. pavement	No
Hatching	Yes 10m at the road edge	Yes 30m median
Road markings	Yes, clear	Yes, clear
Delineation	Clear	Clear
Pedestrian railings	Final 100m and on 2 ped crossings (median)	Yes on 2 ped crossings (median)
Lighting conditions	Energy absorbing lights	
Double yellow line at edge	Yes	
Bicycle/Bus lane/lay-bys	No	No
Road safety barriers	No	No
Median separator	Semi-flexible median road safety barriers first 2km and last 300m, the rest is high kerb separator(apart from 50m)	
Crash Cushions	No	No
Bus stops	9	9
Bollards	100m	No
Cat's eyes	100m	No
Speed cameras	2	1
Warning signs	Mind cyclists, traffic signals, Junction ahead, ped. crossing, Roundabout	
Direction signs	Yes	
Information signs	Camera check area, Bus stop, Central reserved box ahead	
Signs giving order	Speed limit, Keep left/right	
Trees	Yes 2m from road (first 900m) and the after ped pavement	
Shoulder sealing	0.2m	
Traffic lights	14	11 + roundabout
Pedestrian crossing	15	13
Secondary roads	Clear	Clear
Problems identified	The road is currently being constructed so any problems from crash statistics might have been resolved	
	The median road safety barriers are extreme for vulnerable road users	

6.6 Missing data

Some of the required data to run the model was not provided from the road authorities in Cyprus. The missing data involve:

- Costs of road safety measures in the toolkit
- The Annual Average Daily Traffic, and
- Crash and casualty costs used in Cyprus
- The discount rates used

These data were mainly acquired from the literature and were adjusted to the Cypriot currency, Euro.

6.6.1 Road safety measure costs

The costs of the measures were mainly obtained from the *Handbook of road safety measures* by *Elvik et. al* (2009), a book that contains the average cost of measures used in different and mainly European countries. In cases where the measure was not included in the handbook, UK or US market costs were used.

6.6.2 Annual Average Daily Traffic

AADT for the road sections were obtained from road surveys carried out between 2004- and 2007 by the public works department in Cyprus **(PWD, 2008).** Therefore:

- Stasinou-Salaminos Avenue: AADT= 5000-10000veh/day,
- Griva Digeni Avenue: AADT= 5000-10000veh/day

6.6.3 Crash and casualty costs used

The department of MCW provided the 2002 casualty costs, which are projected for 2006 (Collin Buchanan Consortium, 2011). These are:

- Fatal injury: €798,000
- Serious injury: €105,500
- Minor injury: €7.700

The crash costs were not provided, as they are not used by the ministry for the calculations of the effectiveness in road crash reductions. Therefore, it was felt necessary to use the UK difference between the crash and casualty costs to calculate an average estimate of the cost of the crashes. The UK's 2007 costs are shown in Table 6.11.

Table 6.11 Difference between road crash/casualty cost in the UK

Type of crash/injury	Crash Cost (€)	Casualty Cost (€)	Difference between costs (€)
Fatal	1,574,820	1,379,340	195,480
Serious	185,565	154,980	30,585
Minor	18,500	11,955	6,545
Damage only	1,640	0	1,640

Therefore the approximate values tentatively suggested for crash costs in Cyprus are:

- Fatal crash: €995, 000
- Serious crash: €136,000
- Minor crash: €14,000
- Damage only: €1,640

6.6.4 Discount rate

To define a suitable discount rate, the following information from the literature was recommended:

a. The Institute for Road Safety Research, SWOV in Netherlands, recommends a discount rate of 2.5% to be used in governmental projects **(SWOV, 2007)**.

b. The European Union guide to cost-benefit analysis on investment projects recommends a social discount rate of 5% to be used **(ROSEBUD, 2006)**.

c. The handbook of road safety measures is using Norway's discount rate of 4.5% **(Elvik et. al, 2009)**.

For this study a 5% discount rate was used, as this is the recommended value suggested by the European Commission for the assessment of road safety measures.

6.7 Summary

In this Chapter the data collected to demonstrate the applicability of the approach developed in this work in Cyprus was presented. Not all the data needed were publically available for collection and therefore other sources were used. However, using data from other sources might not produce accurate results, but this was considered to be a reasonable option.

The next Chapter seeks to apply the data collected into the road safety model created and recommends road safety measures that are calculated to provide an economic crash and casualty reduction effectiveness.

Chapter 7:

Model application and results

7 MODEL APPLICATION AND RESULTS

7.1 Introduction

This Chapter explains the application of the road safety model to Cyprus by considering the Stasinou-Salaminos and Griva Digeni road safety data presented in Chapter 7.

The objective of the model is to identify the optimum road safety measures by following a number of steps:

1. Using Part A of the road safety model, identify measures according to the area characteristics and the types of crashes that have occurred between 2007-2009.

2. Using Part B of the model, considered three measures from those identified. In cases where more than three measures were found to be suitable, a bigger number was taken into consideration. In addition, any hazards identified from road inspections, when driving though the road sections, were taken into account to identify road safety measures needed to fix them.

4. Economic assessment of the measures was the carried out to yield the optimum outcome.

5. The most beneficial measures were identified using Parts C and D.

Only engineering measures were considered in the assessment, as measures for safer vehicles and safer people are applied to the whole population using laws of the country and do not concern only one road section. For example if drug and alcohol were addressed in these two road sections, then people might have chosen to travel using a different route which would only transfer the problem to another area rather than tackling it. The fifth part of the model was not used since the future crash values in the road sections were unknown.

7.2 Case study 1: Stasinou – Salaminos Avenue

Using the model, a number of measures were chosen according to the area characteristics and most common crash types that occurred in the road network (see Table 7.1).

Table 7.1 Road safety engineering measures for Stasinou - Salaminos Avenue

Road safety engineering measures recommended by the model		
Delineation- Central median kerb	Gateways	Guardrails/Pedestrian barriers
Delineation central raised kerb divider	Lighting	High kerb (edge of road pavement)
Delineation- raised rib edge lines	Parking Improvements	Raised planters
Delineation- central line marking	Amenity trailing	Wire railings
Delineation-road markings	Bollards	Speed reducing treatments
Pavement narrowing	Speed cushion	Central Hatching
Warning signs	Speed activated warning signs	One-way network

During road inspections it was noticed that:

- Nineteen secondary roads exist on the right hand side of the 1800 m road, 3 of them were one-way roads. Figure 7.1 shows the one-way roads using a red one-way sign (⃠). For this reason, it was felt advisable to suggest that four additional one-way network roads could be created to increase the safety of the road. According to Scott *et. al* (1996), as access points increase in one mile of road section that has a high AADT, crash rate increases. It was therefore, considered that intersections that are next to intersections which lead to the same roads, and have a poor visibility, may become one-way roads. Moreover, two of the one-way intersections were suggested as crashes occurred on them **(Elvik et. al, 2009).** The tentatively suggested one-way roads are shown with a green one-way sign (⃠).
- The white road markings on the road pavement, were poor and almost invisible. This can cause a problem, especially during night-time, when the road lines look almost non-existent (Elvik et al, 2009). Therefore, both central line delineation

and road pavement markings showing the lane that should be taken when driving, were considered as a measure that needed to be fixed.

- No signs showing the speed limit in the road section existed, on the two-lane road. This can confuse drivers as they might think that the road has a higher speed limit. Therefore, two measures were considered which are speed activated signs and warning signs. *Four speed-activated signs* were considered to be input, two at the beginning of each side of the road and two in the middle; and Moreover, twenty speed-warning signs were considered, at each intersection, so that the drivers coming in the road from intersections are aware of the speed limit that exists **(Baluja, 2010).**

In addition to these, central hatching was considered for implementation, not only to separate the opposite traffic flows, but also provide a pedestrian refugee when crossing the road. Since the road section is around 14.2m wide, according to the road standards requiring the carriageway to be at least 6.5m wide **(TRL, 1988),** central hatching of 1-1.2m in width (**Elvik et. al, 2009**) can be implemented.

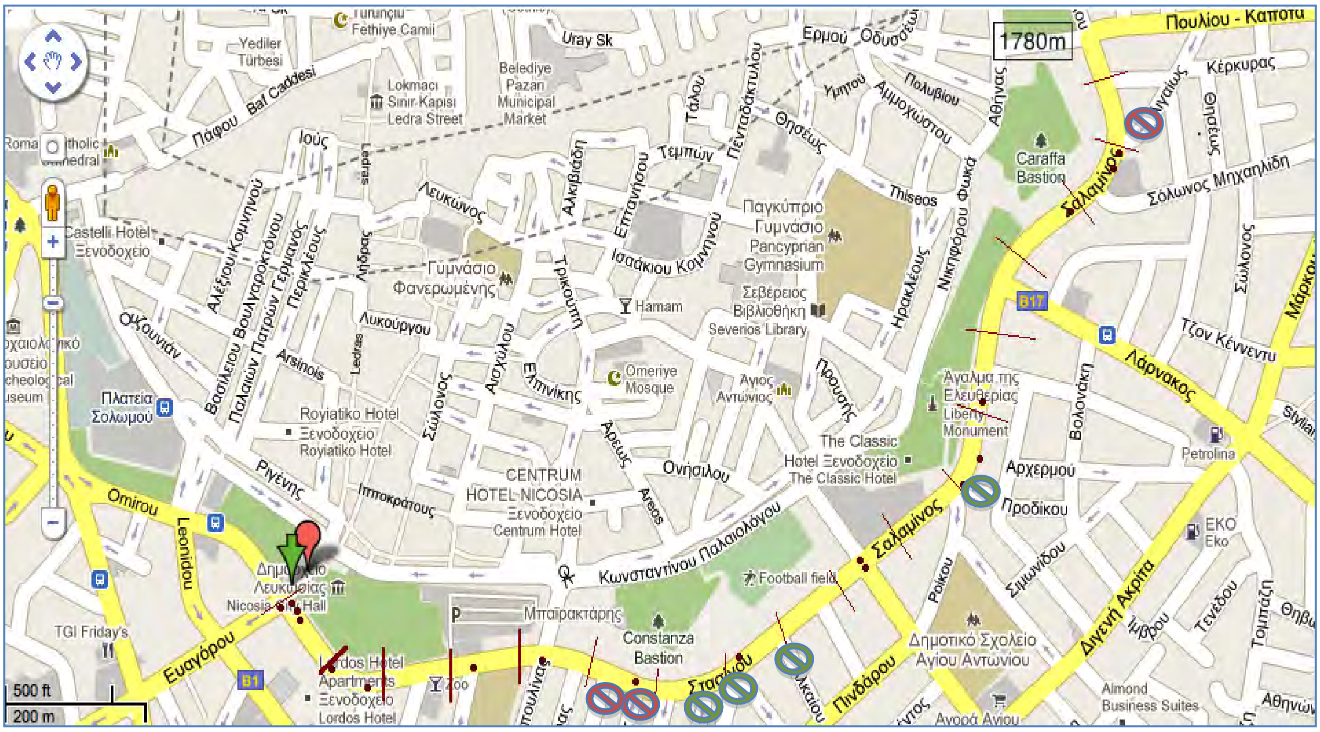


Figure 7.1 One-way road network tentatively recommended plan

Hence, the six road measures that were compared are:

- Speed warning signs
- One-way road networks
- Pavement narrowing
- Speed activated warning signs
- Delineation
- Central Hatching

and their costs were calculated according to the avenue needs, as shown in Figure 7.2.

The cost for each measure was calculated by:

- Central hatching: Initial Cost= €5,000x 1.8=€9,000.00/7 years

  Annual maintenance= €1,125.00

- One way networks: Cost= 4 one way roads* €1,300= €5,200.00/ 7 years

  Annual maintenance= €900.00

- Delineation: Initial cost= (3 lanes *1800m *€0.6/m) +(50 road markings * €1.5/squared meter x 2 sq. m. /each)=€3,390.00 per 7 years

  Annual Maintenance= (3lanes*1800* €0.25/m) + (50 road markings * €0.50/sq. m * 2 sq. m each)= €1,550.00

- Pavement narrowing: Initial cost: €5,750*1.8km= €10,350.00 per 7 years

  Annual Maintenance= €1,900*1.8km= €3,420.00

- Speed warning signs: Initial cost= 20 signs * €455/each= €9,100.00 per 7 years

  Annual Maintenance= 20 signs * €225 each= €4,500.00

- Speed activated signs: Initial cost= 4 signs * €5,000 each= €20,000.00 per 7 years

  Annual Maintenance= 4 signs * €300 each= €1,200.00

Accident types and treatment																	
	Street Name (Stasinou - Salaminos Avenue, Nicosia)																
	Area information						Crash information						Casualty Information				
Start point	Finish point	Length (km	Width (km)	Area (km²)	AADT (veh/day)	Discount rate	No. of fatalities	No. of seriously injured	No. of minor injured	No. of damage only	Total	No. of years of data	No. of fatalities	No. of seriously injured	No. of minor injured	Total	No. of years of data
A	B	1.8	1.40E-02	0.0252	7500	5%	1	17	0	0	18	3	1	18	5	24	3

Cost of crash (Euros)			
Fatal	Serious	Minor	Damage only
999,500	140,000	14,500	1,640

Cost per casualty (Euros)			
Fatal	Serious	Minor	Damage only
798,000	105,500	7,700	0

Cost of crashes/casualties (Euros)					
Cost of crashes	Cost of crashes/year	Average cost per crash	Cost of casualties	Cost of casualties/year	Average cost per casuaty
3,379,500	1,126,500	187,750	2,735,500	911,833	113,979

Treatments	Treatment information							Accident Types								First Year Rate of	
Safer roads	Initial Cost (Euros)	Maintenance and operating cost (Eur	Crash reduction effectiven	Annual reduction effectiveness	Casualty reducti	Annual casualty reduct	Treatment life	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off-road	Vehicle-cyclist	Vehicle-Pedestrian	FYRR Crashes (detailed method)	FYRR Casualty (detailed method)
Central Hatching	€ 9,000.00	€ 1,125.00	20%	2.9%	50%	7.1%	7									198.68	380.88
Delineation	€ 3,390.00	€ 1,150.00	30%	4.3%	32.50%	4.6%	7									791.19	657.27
Speed activated signs	€ 20,000.00	€ 1,200.00	58%	8.3%	30%	4.3%	7									259.27	102.84
Warning signs	€ 9,100.00	€ 4,500.00	30%	4.3%	32.50%	4.6%	7									294.74	244.85
One way network	€ 5,200.00	€ 900.00	3%	0.4%	50%	7.1%	7									51.58	659.21
Pavement Narrowing	€ 10,350.00	€ 3,420.00	60%	8.6%	3%	0.4%	7									518.29	19.87

Figure 7.2 Measures considered for economic assessment

7.2.1 Crash economic assessment results

Economic assessment for all six measures is shown in Table 7.2 and Figures 7.3-7.8 show the annual economic costs and benefits of each treatment from reducing crashes in Stasinou-Salaminos Avenue, for a period twenty years. In cases where the lifetime of a measure terminates, a reapplication of the measure is assumed instead of annual maintenance.

Table 7.2 Crash economic assessment

Scheme	FYRR	NPV	NPV/PVC	BCR	IRR
Speed warning signs	294.74%	€ 532,891	7.53	8.5	524%
Speed activated warning signs	259.27%	€ 1,107,340	19.16	20.16	461%
One way network	51.28%	€ 34,511	1.59	2.59	60%
Delineation	791.19%	€ 583,218	28.5	29.5	1395%
Pavement narrowing	518.29%	€ 1,145,930	18.66	19.66	903%
Central Hatching	198.68%	€ 374,528	11.5	12.5	350%

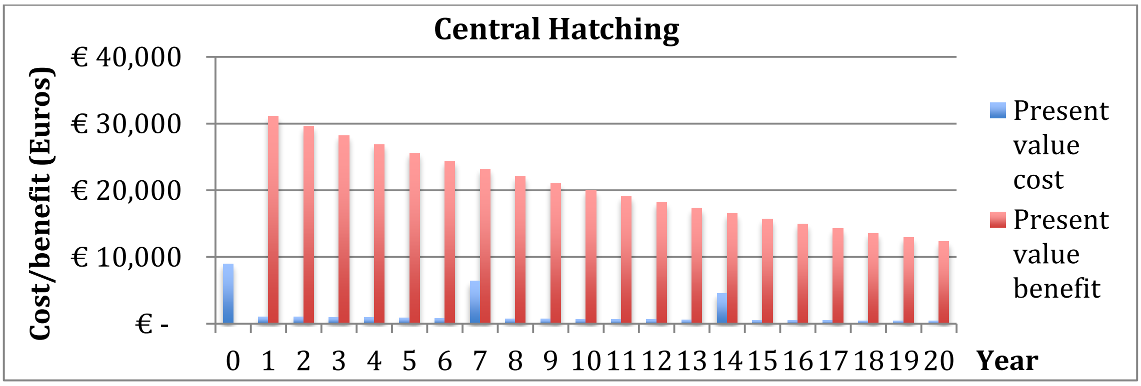


Figure 7.3 Annual costs and benefits of decreasing crashes using central hatching for twenty years

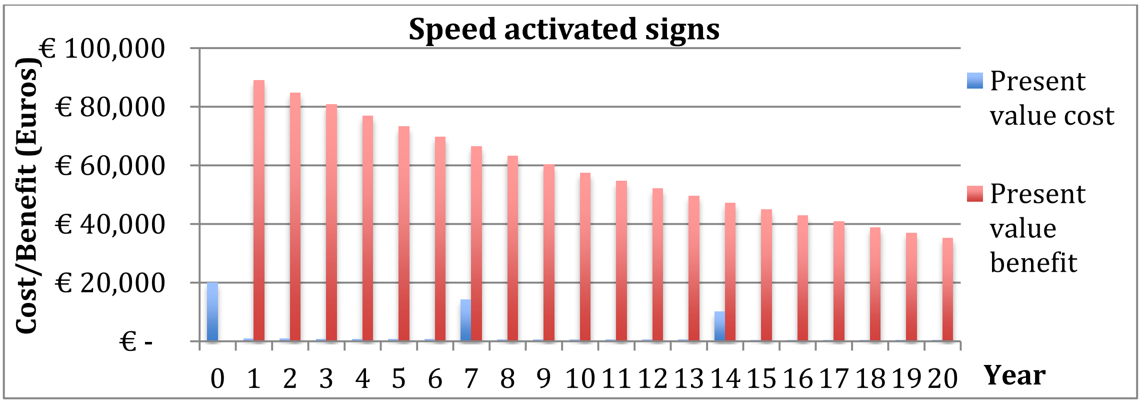


Figure 7.4 Annual costs and benefits of decreasing crashes using speed activated signs for twenty years

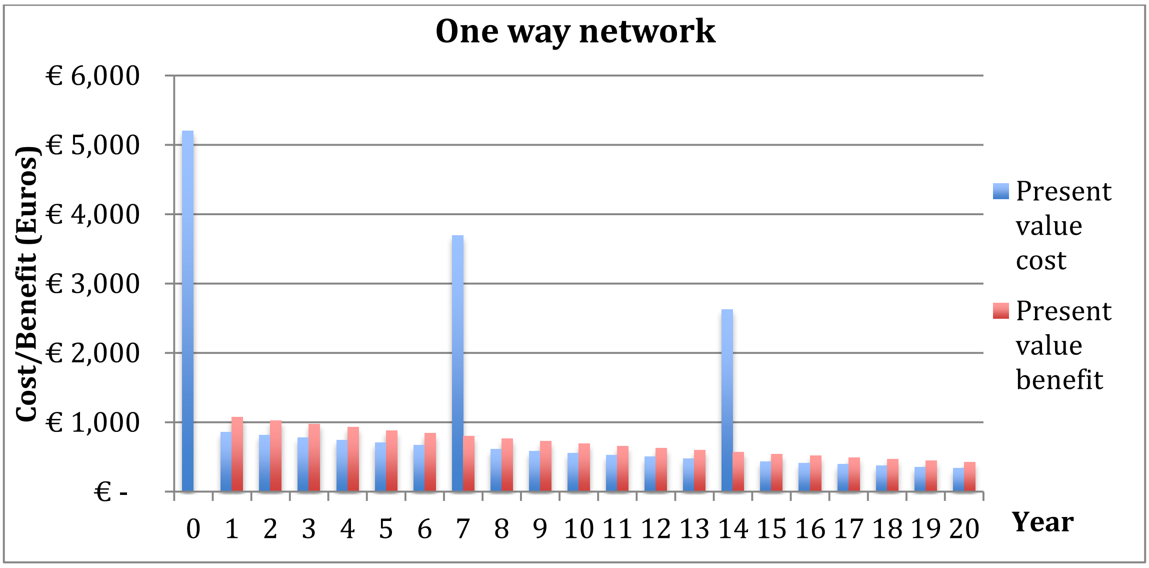


Figure 7.5 Annual costs and benefits of decreasing crashes by implementing one-way networks for twenty years

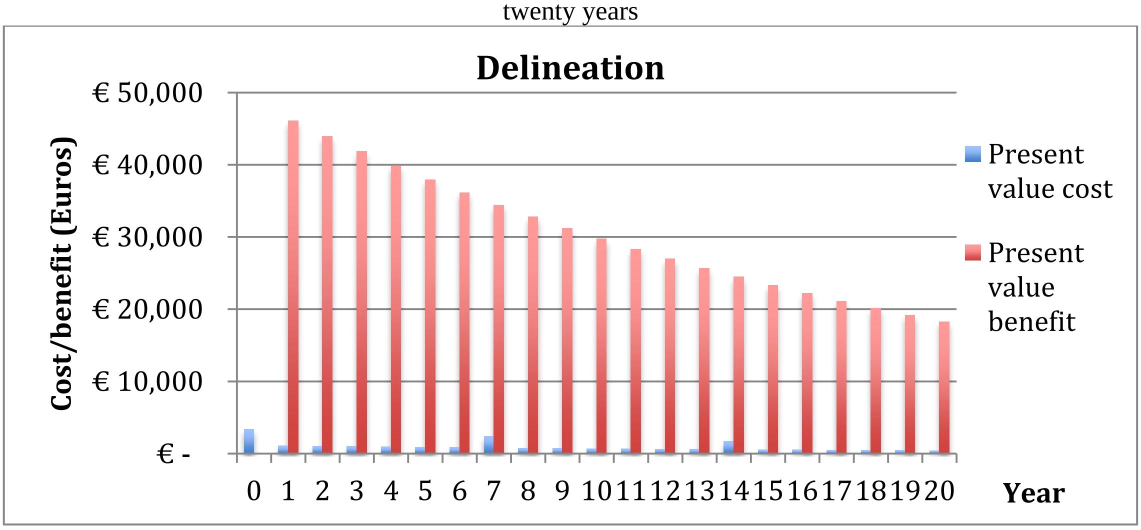


Figure 7.6 Annual costs and benefits of decreasing crashes by implementing delineation for twenty years

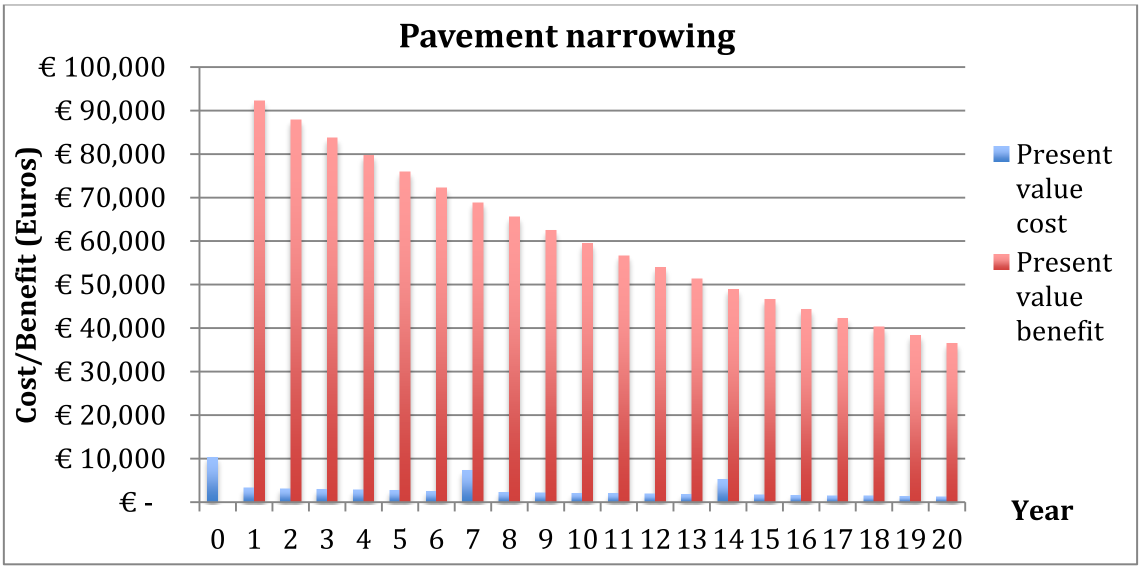


Figure 7.7 Annual costs and benefits of decreasing crashes using pavement narrowing for twenty years

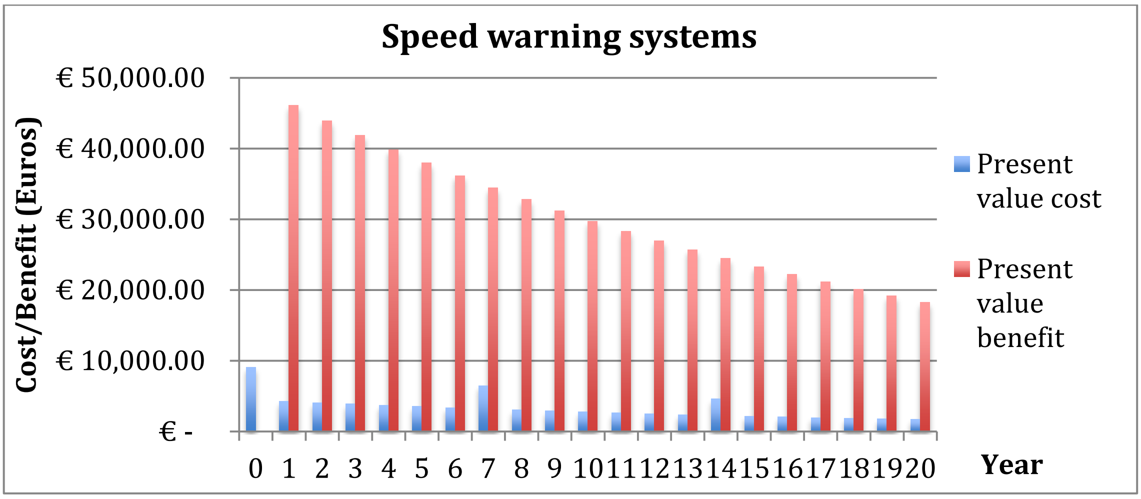


Figure 7.8 Annual costs and benefits of decreasing crashes using speed warning systems for twenty years

The results were compared and the most beneficial in each category results are represented in Table 7.3.

Table 7.3 Scheme selection per crash economic assessment category

Scheme selection per assessment category		
FYRR	791.19%	Delineation
NPV	€ 1,145,930	Pavement narrowing
NPV/PVC	28.5	Delineation
BCR	29.5	Delineation
IRR	1395%	Delineation

Therefore, if the road authority wants to decrease crashes in the area, pavement narrowing highest NPV, but delineation seems to be the most effective measure in both decreasing the crashes and have a positive return in twenty years time. By considering the results in Table 7.2, speed activated warning signs is a recommended measure, as it has the next best crash economic assessment values.

7.2.2 Casualty economic assessment results

Table 7.4 shows the results from the economic assessment for casualty reduction effectiveness. Figures 7.9-7.14 show the annual economic costs and benefits of each treatment from reducing casualties in Stasinou-Salaminos Avenue, for twenty years.

Table 7.4 Casualty economic assessment

Scheme	FYRR	NPV	NPV/PVC	BCR	IRR
Speed warning signs	244.85%	€ 363, 441	12.71	13.71	337%
Speed activated warning signs	102.84%	€ 108,661	5.34	6.34	141%
One way network	659.21%	€ 583,461	26.96	27.96	916%
Delineation	657.27%	€ 371,595	18.18	19.18	894%
Pavement narrowing	19.87%	- € 27,305	0.44	0.56	-
Central Hatching	380.88%	€ 581,373	24.5	25.5	949%

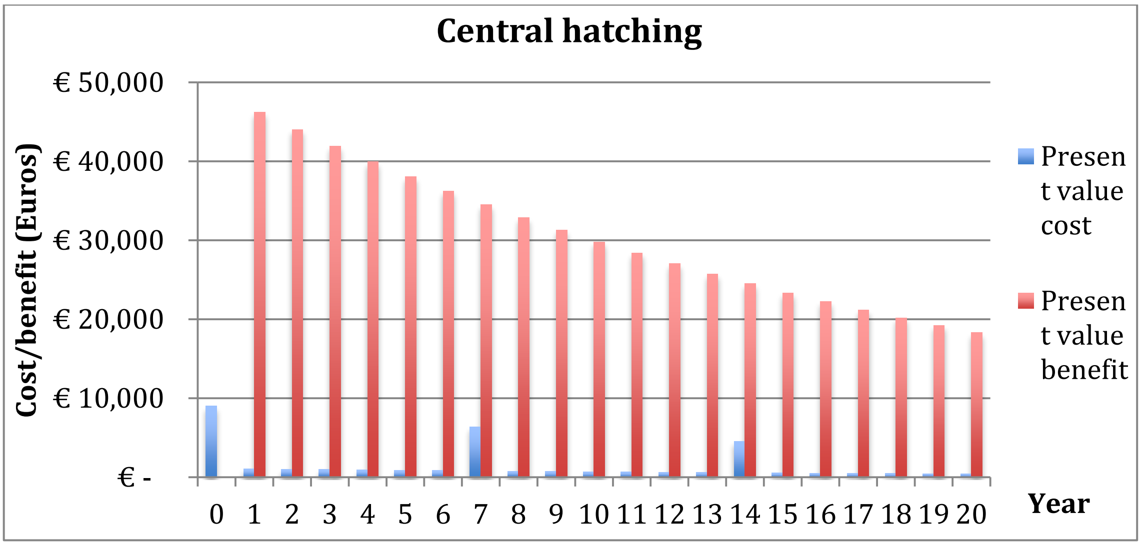


Figure 7.9 Annual costs and benefits of decreasing casualties using central hatching for twenty years

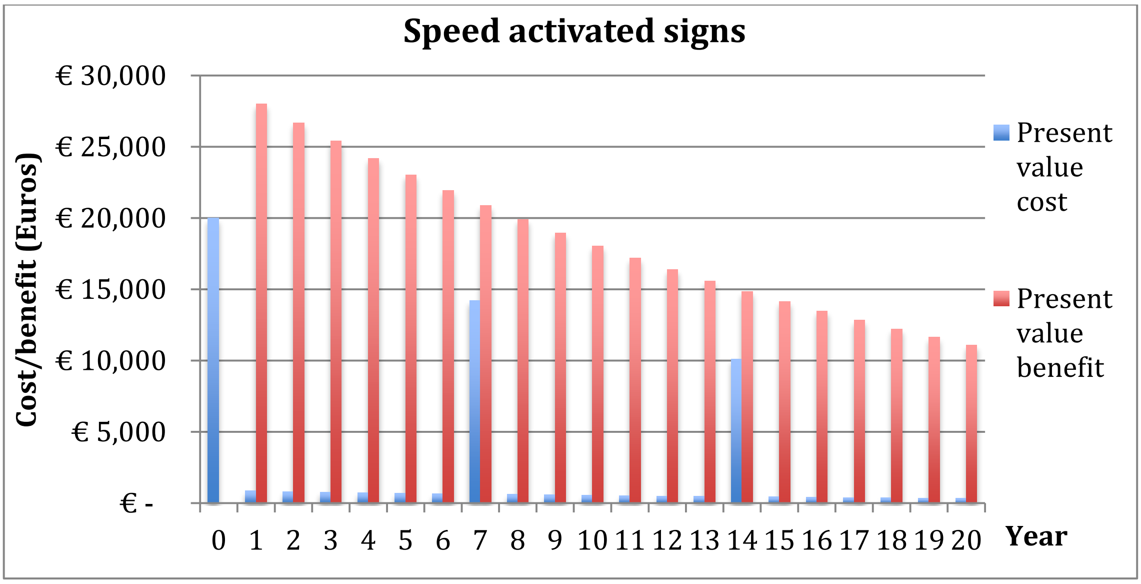


Figure 7.10 Annual costs and benefits of decreasing casualties using speed activated signs for twenty years

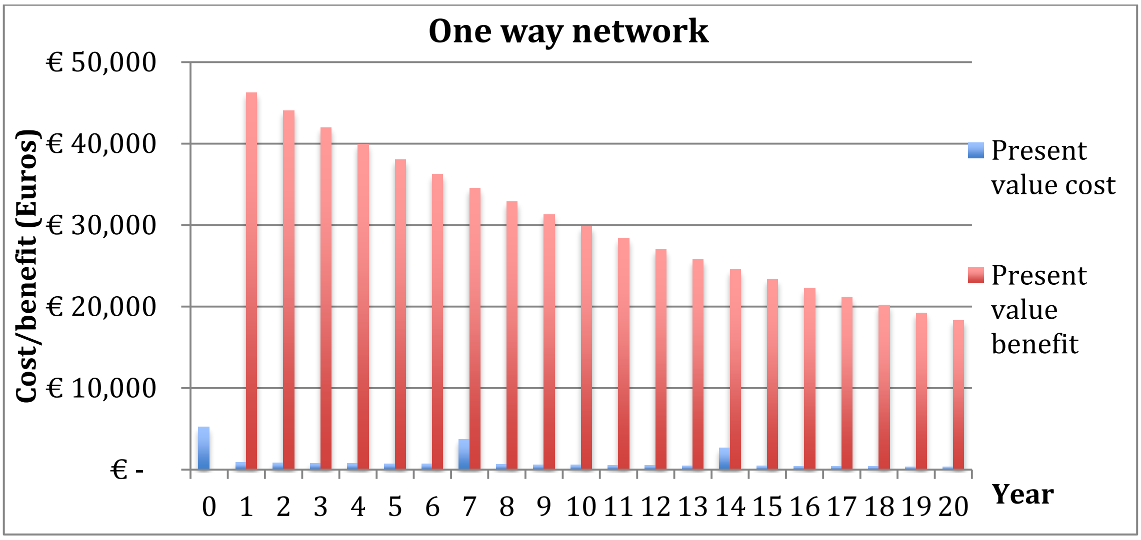


Figure 7.11 Annual costs and benefits of decreasing casualties by implementing one way network for twenty years

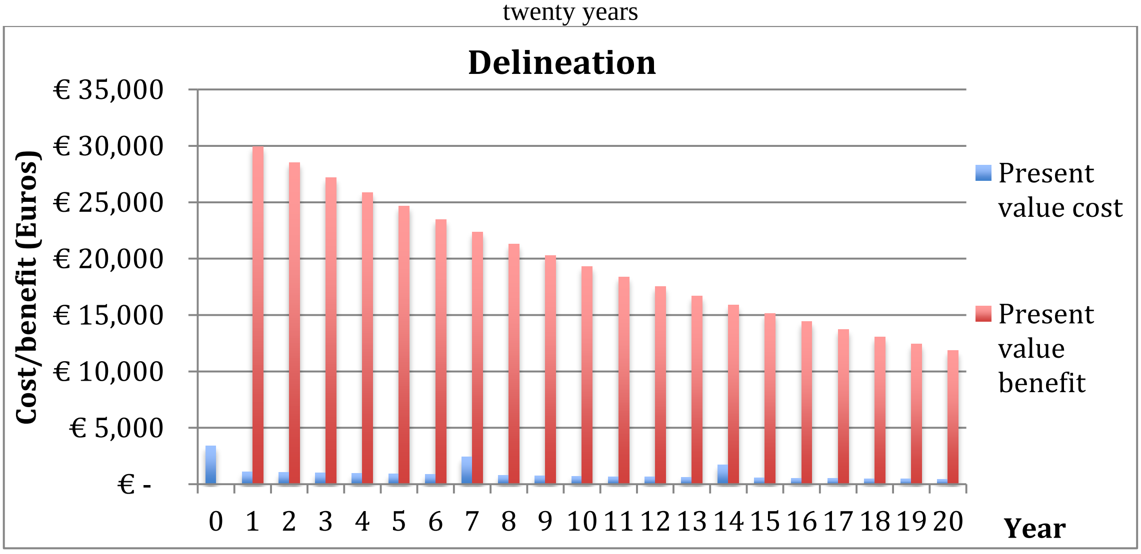


Figure 7.12 Annual costs and benefits of decreasing casualties by using delineation for twenty years

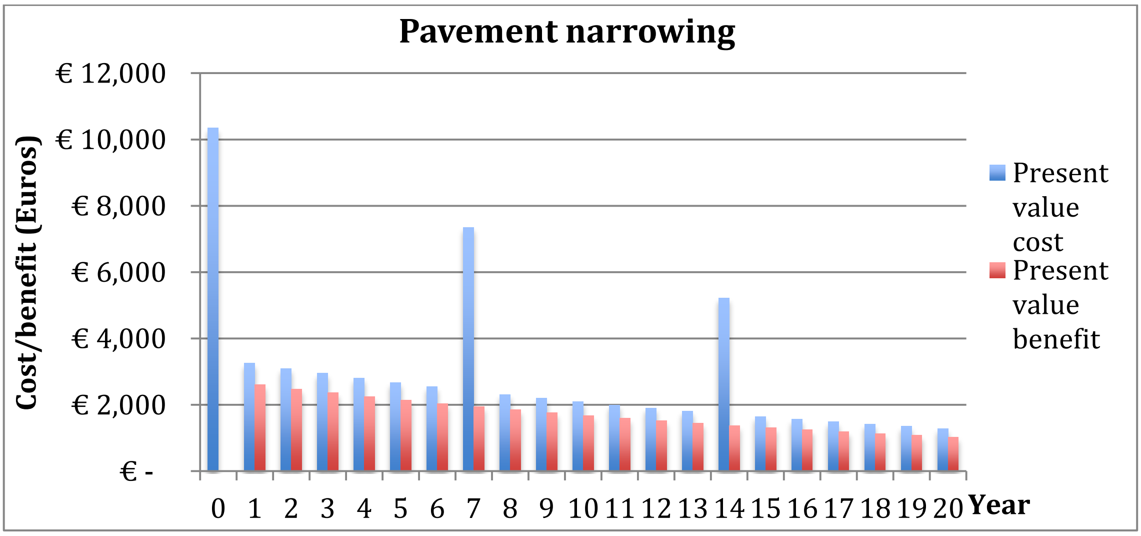


Figure 7.13 Annual costs and benefits of decreasing casualties by using pavement narrowing for twenty years

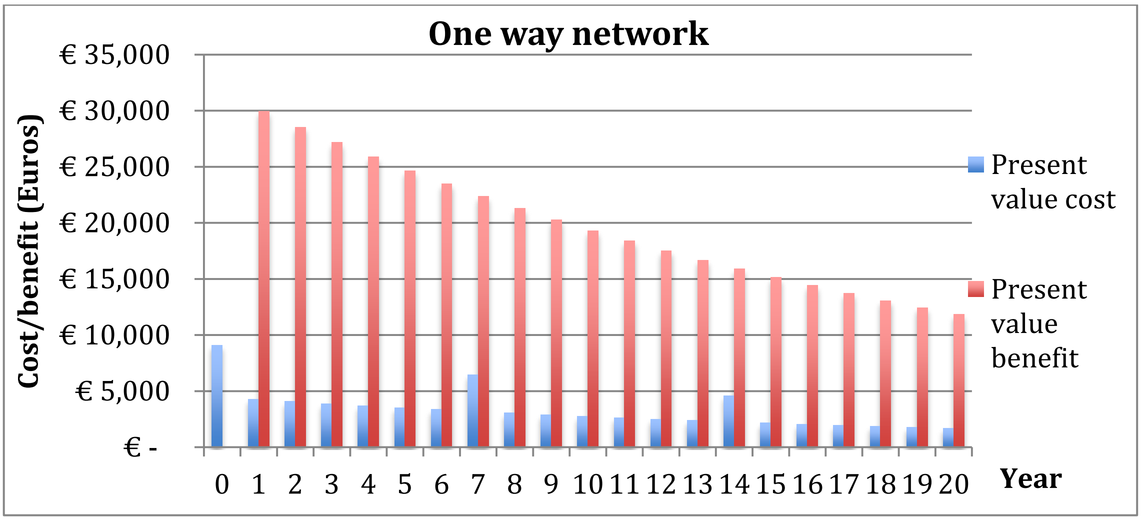


Figure 7.14 Annual costs and benefits of decreasing casualties by implementing one way network for twenty years

Further Table 7.5 shows that the best measure in terms of economic effectiveness and crash reduction is to suggest one-way system in Stasinou Salaminos Avenue.

Scheme selection per assessment category		
FYRR	519%	One way network
NPV	€ 591,776	One way network
NPV/PVC	44.4	One way network
BCR	45.4	One way network
IRR	916%	One way network

Table 7.5 Scheme selection per assessment category

Therefore, taking all the results into account, the most beneficial measures that may be recommended is one-way network.

7.3 Case study 2: Griva - Digeni Avenue

Following the same procedure, the road safety measures that were considered for implementation in Griva Digeni Avenue by the model are:

Table 7.6 Measures eliminated to be implemented in Griva Digeni Avenue

Measures chosen for implementation		
Delineation- Central line markings	Vehicle activated warning signs	Lighting
Delineation- Central raised kerb divider	Warning signs	Median barrier
Informative signs	Speed cameras	Motorcycle safety barrier
Retro-reflective pavement markers	Gateways	Amenity trailing
Regulatory signs	Intersection- delineation	Bollards
Delineation- road markings	Intersection- turn lanes un-signalised	Guard rails/ Pedestrian barriers
High kerb (edge of road pavement)	Raised planters	Wire railings
Mini roundabout	Pavement narrowing	Traffic calming
Bicycle lanes-counter flow	Bicycle wide curb lanes	

During road inspection it was noticed that:

- No bicycle lanes exist, even though the road and pedestrian pavement are both wide.
- A wide pedestrian pavement exists throughout all of the 4.2 km apart from the first 300m where a high kerb exists but it is not paved so that people can walk on it.
- Median road safety barriers exist, but between 2007 and 2009 two motorcyclists were killed and one was seriously injured. The barriers were described as extreme in the road crash statistics forms. Therefore motorcycle safe safety barriers might be a good measure for motorcyclists **(EuroRAP, 2008)**.

Therefore, the measures considered for implementation from both road inspections and model application, are:

- Motorcyclist safe safety barriers
- Speed activated signs
- Bicycle lanes (counter-flow)
- Wide kerb bicycle lanes
- High kerb (edge of road pavement)

The costs of the measures were calculated and are presented in Figure 7.15. The results from the economic assessment of the measures are shown in Sections 7.2.1 and 7.2.2

Cost calculations of the measures considered:

- Motorcyclist safe road safety barrier: Initial cost= 3000m * €16.5 = €49,450.00 per 5 years

  Annual maintenance= € 600.00

- Wide kerb bicycle lanes: Initial cost = €3,800 * 4.2 km= €15,960.00 per 7 years

  Annual maintenance = €850 * 4.2km= €3,570.00

- Speed activated signs: Initial cost= 6 signs* €5,000 each = €30,000.00 per 7 years

  Annual maintenance= 6 signs * €300 each= €1,800.00

- High kerb (edge of road pavement): Initial cost= €44.5 * 300m= €13,350.00 per 20 years

  Annual maintenance= €300.00

- Bicycle lanes (Contraflow): Initial cost= €30,000* 4.2km= €130,000 per 7 years

  Annual maintenance= €650.00

Accident types and treatment

Street Name (Griva Digeni Avenue, Nicosia)

	Area information						Crash information						Casualty Information				
Start point	Finish point	Length (km)	Width (km)	Area (km^2)	AADT (veh/day)	Discount rate	No. of fatalities	No. of seriously injured	No. of minor injured	No. of damage only	Total	No. of years of data	No. of fatalities	No. of seriously injured	No. of minor injured	Total	No. of years of data
Roundabout	Starbucks	4.2	1.36E-02	0.05712	7500	5%	4	13	0	0	17	3	4	15	1	20	3

Cost of crash (Euros)			
Fatal	Serious	Minor	Damage only
999500	140,000	14,500	1,640

Cost per casualty (Euros)			
Fatal	Serious	Minor	Damage only
798,000	105,500	7,700	0

Cost of crashes/casualties (Euros)					
Cost of crashes	Cost of crashes/year	Average cost per crash	Cost of casualties	Cost of casualties/year	Average cost per casuaty
5,818,000	1,939,333	342,235	4,782,200	1,594,067	239,110

Treatments	Treatment information							Accident Types								First Year Rate of Return	
Safer roads	Initial Cost (Euros)	Maintenance and operating cost (Eur	Crash reduction effectiven	Annual reduction effectiven	Casualty reduction	Annual casualty reduct	Treatment life	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off-road	Vehicle-cyclist	Vehicle-Pedestrian	FYRR Crashes (detailed method)	FYRR Casualty (detailed method)
Bicycle lanes (counterflow)	€	€ 620.00	30%	0.6%	32.50%	0.7%	7									2.29	1.92
Wide kerb lanes (bicyclists)	€ 15,960.00	€ 3,570.00	30%	0.6%	32.50%	0.7%	7									18.66	15.66
Speed activated signs	€ 30,000.00	€ 1,800.00	58%	8.3%	30%	4.3%	7									127.53	51.74
High kerb (edge of road pavement)	€ 13,350.00	€ 100.00	17.50%	0.1%	50%	0.4%	20									4.67	10.17
Safer road safety barrier	€ 49,450.00	€ 600.00	25%	3.3%	50%	6.5%	5									30.35	47.61

Figure 7.15 Measures considered for economic assessment

7.3.1 Economic crash assessment

To achieve better accuracy of the results, in cases where a measure is used to treat crashes for only one type of road user, the number of this type of road users was taken into consideration.

For example, for the edge of road high kerb, the annual casualty reduction is 0.9%. But since the measure is concerns pedestrians only, the value was multiplied by 15%, which is the annual average percentage of pedestrians amongst all road users involved in crashes in this avenue. The amount was calculated according to the crashes that occurred between 2007 and 2009.

Scheme	FYRR	NPV	NPV/PVC	BCR	IRR
Motorcyclist safe road safety barrier	30.35%	€ 618,371.4	3.7	4.7	113%
Speed activated signs	127.53%	€ 1,919,259	22.1	23.1	531%
Wide curb bicycle lanes	18.66%	€ 80,371.4	1.06	2.1	53%
Bicycle lanes (counter-flow)	2.29%	- € 35,210	-0.1	0.9	-13%
High kerb (edge of road pavement)	4.67%	€ 15,539	0.91	1.91	12%

Table 7.7 Crash reduction economic assessment results

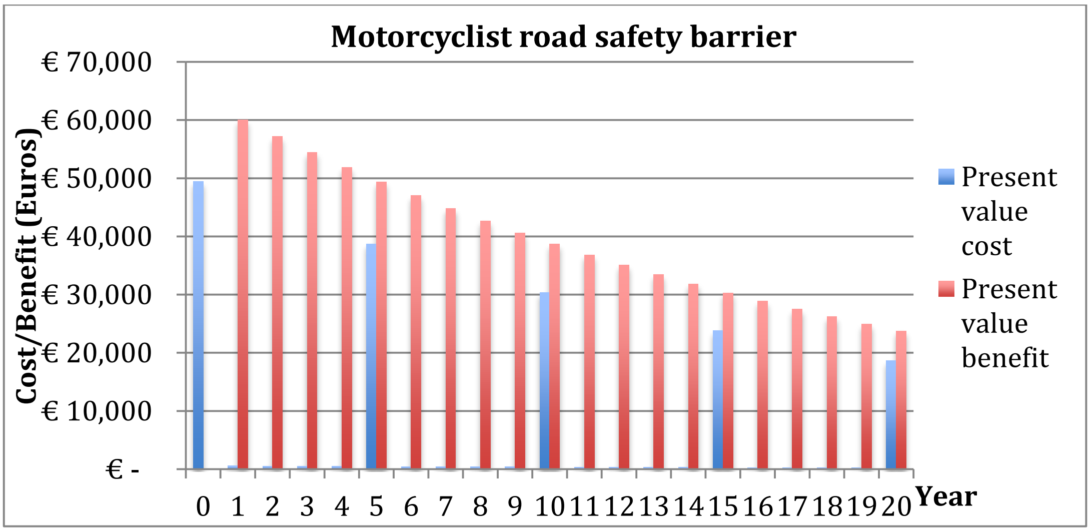


Figure 7.16 Annual costs and benefits of decreasing crashes using motorcyclist road safety barrier for twenty years

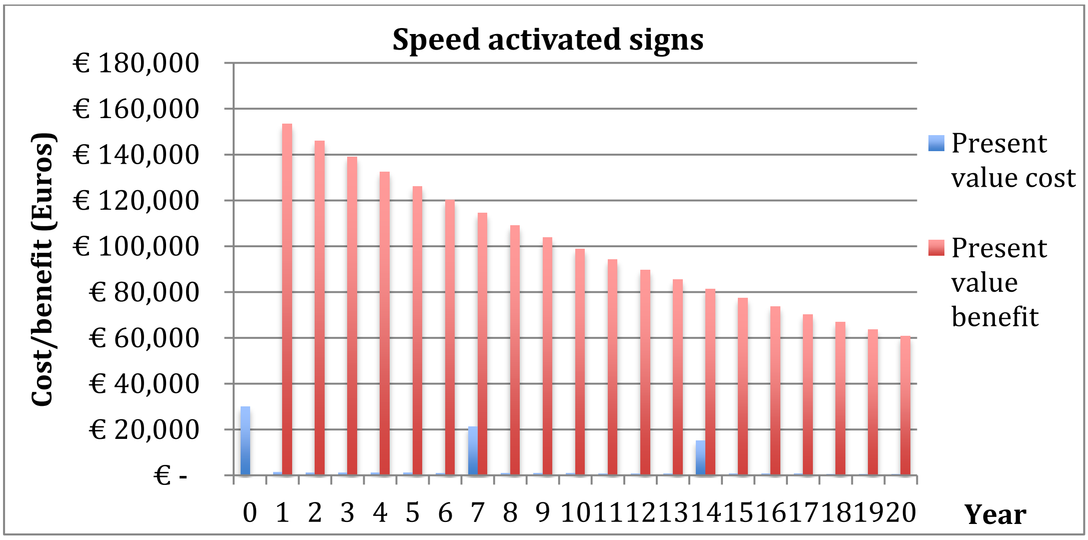


Figure 7.17 Annual costs and benefits of decreasing crashes using speed activated signs for twenty years

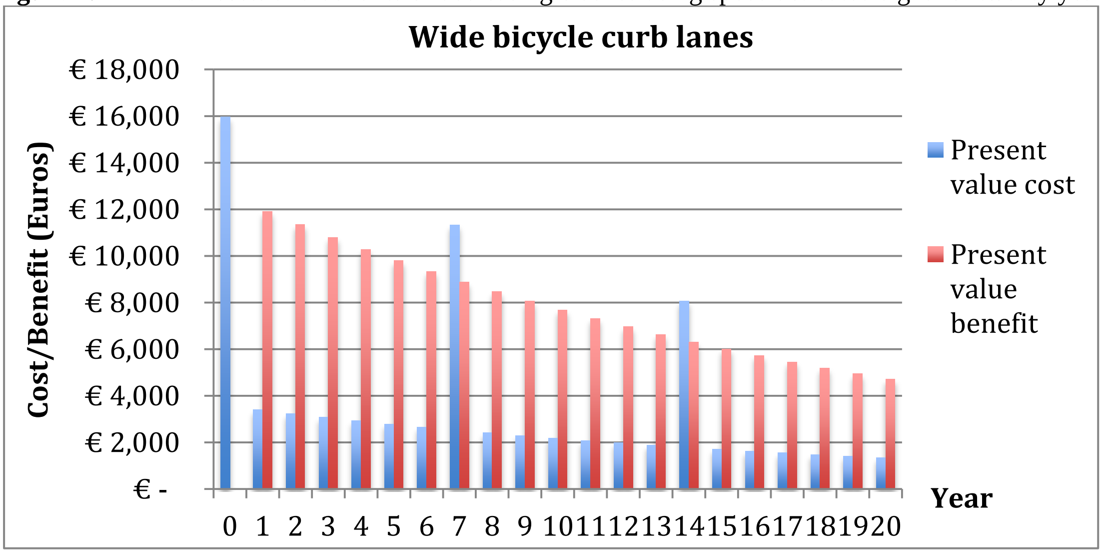


Figure 7.18 Annual Costs and benefits of decreasing crashes using wide kerb lanes for twenty years

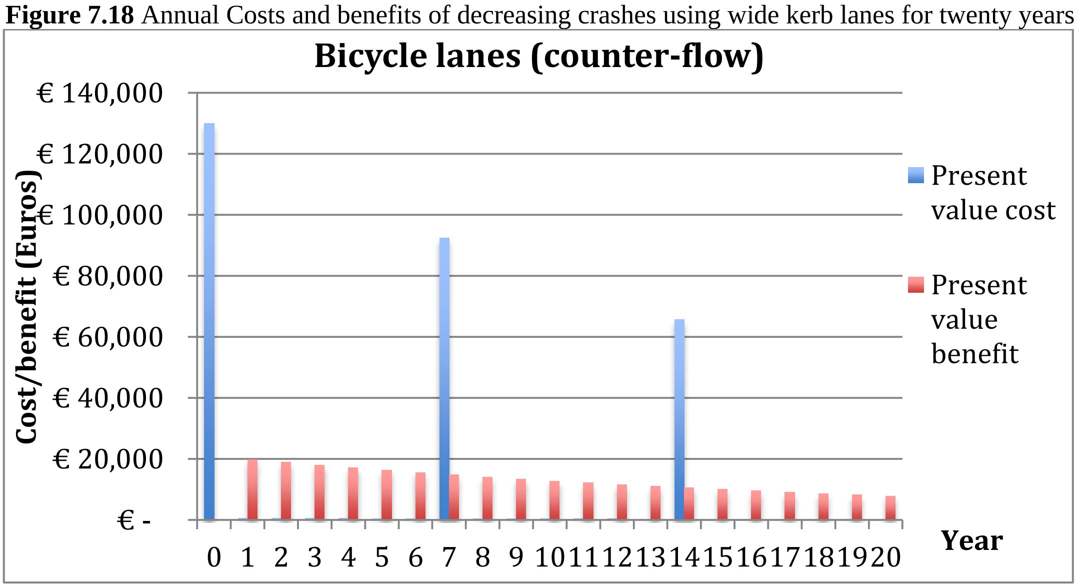


Figure 7.19 Annual costs and benefits of decreasing crashes using counter-flow bicycle lanes for twenty years

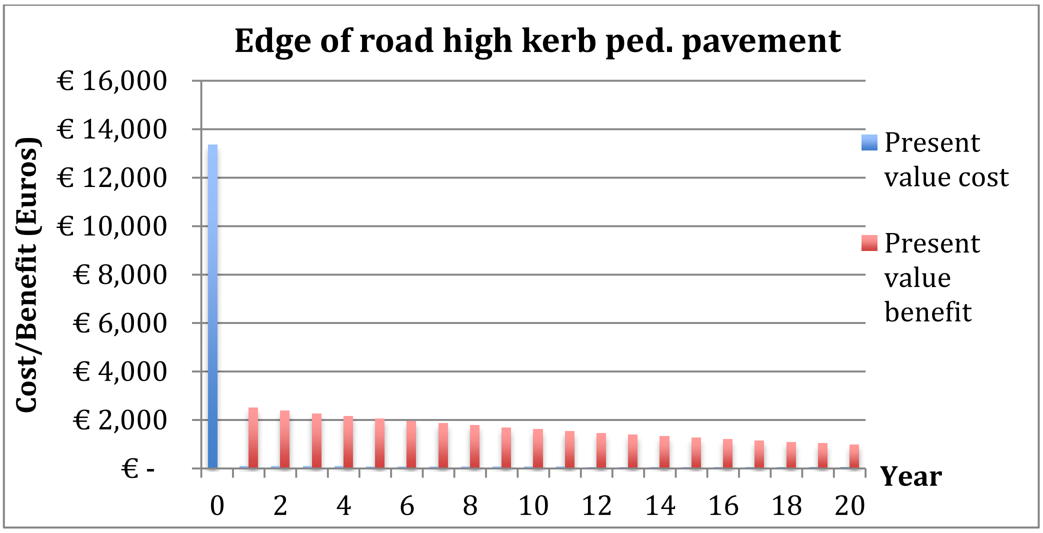


Figure 7.20 Annual costs and benefits of decreasing crashes using edge of road high kerb pedestrian pavement for twenty years

Selection of scheme		
FYRR	127.53%	Speed activated signs
NPV	€ 1,919,259	Speed activated signs
NPV/PVC	22.1	Speed activated signs
BCR	23.1	Speed activated signs
IRR	531%	Speed activated signs

Table 7.8 Scheme selection per assessment category

Table 7.8 shows that the most beneficial and crash reduction effective measure is to implement six speed activated warning signs in the avenue.

7.3.2 Economic casualty assessment

The economic assessment results of the recommended measures in reducing casualties are shown in Table 7.9 and in Figures 7.21- 7.25.

Scheme	FYRR	NPV	NPV/PVC	BCR	IRR
Motorcyclist safe road safety barrier	47.61%	€ 930,473.1	5.57	6.57	176%
Speed activated signs	51.74%	€ 639,731.4	7.37	8.4	188%
Wide curb bicycle lanes	15.66%	€ 40,998	0.54	1.5	30%
Bicycle lanes (counter-flow)	1.92%	- € 64,532.2	-0.37	0.6	-15%
High kerb (edge of road pavement)	10.17%	€ 46,232.92	2.71	3.71	34%

Table 7.9 Economic casualty assessment results

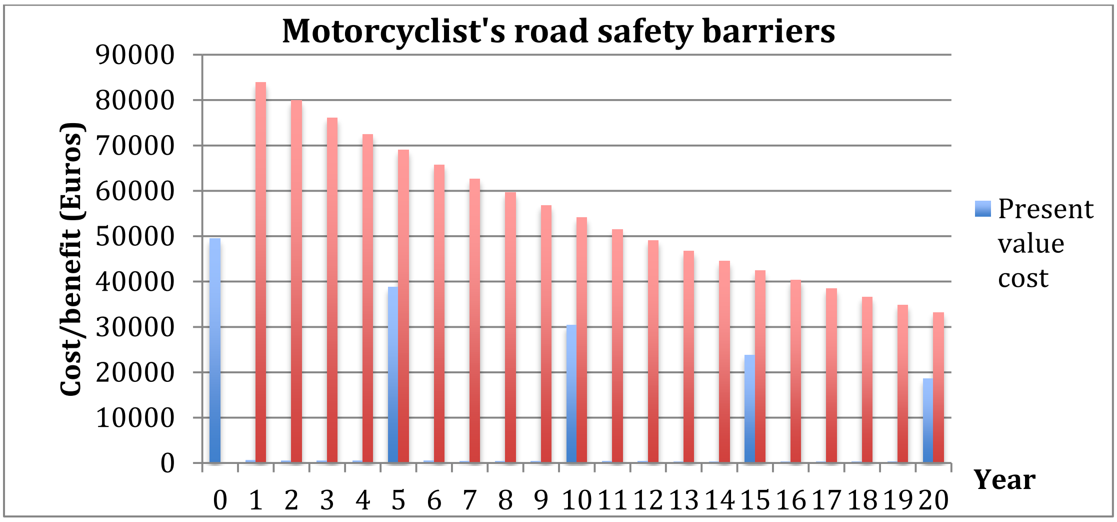


Figure 7.21 Annual costs and benefits for decreasing casualties using motorcyclist road safety barriers for twenty years

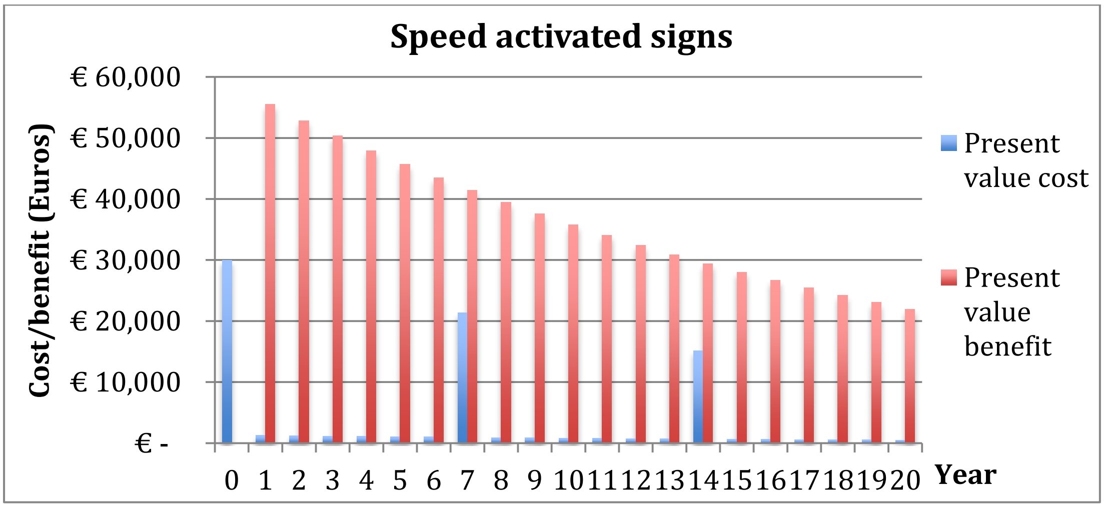


Figure 7.22 Annual costs and benefits for decreasing casualties using speed activated signs for twenty years

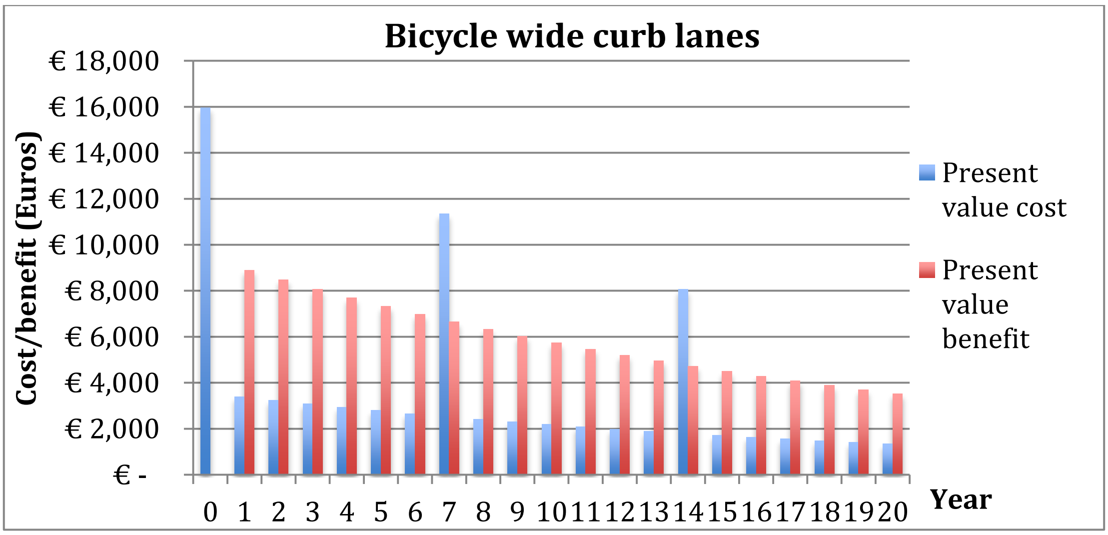


Figure 7.23 Annual costs and benefits for decreasing casualties using bicycle wide curb lanes for twenty years

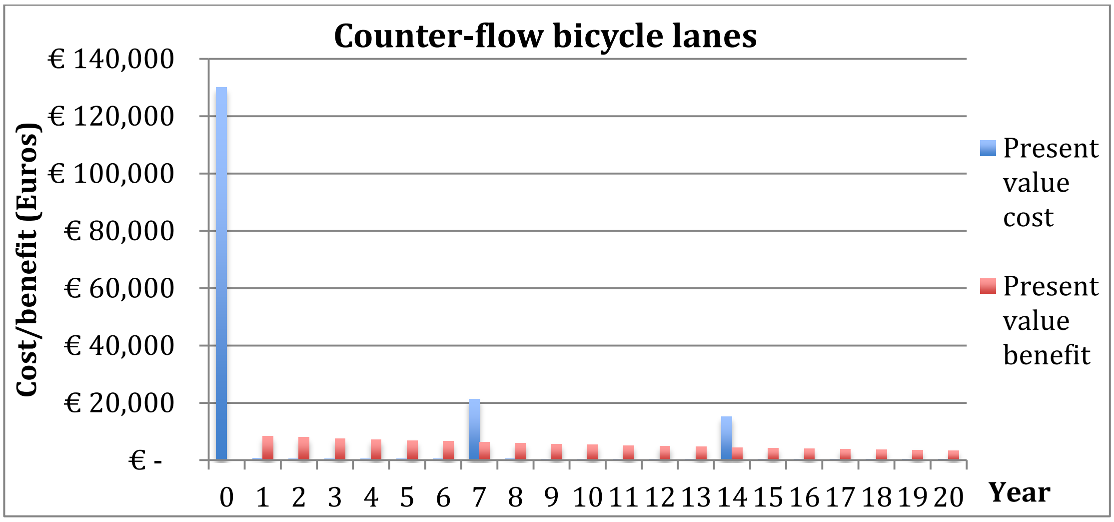


Figure 7.24 Annual costs and benefits for decreasing casualties using counter-flow bicycle lanes for twenty years

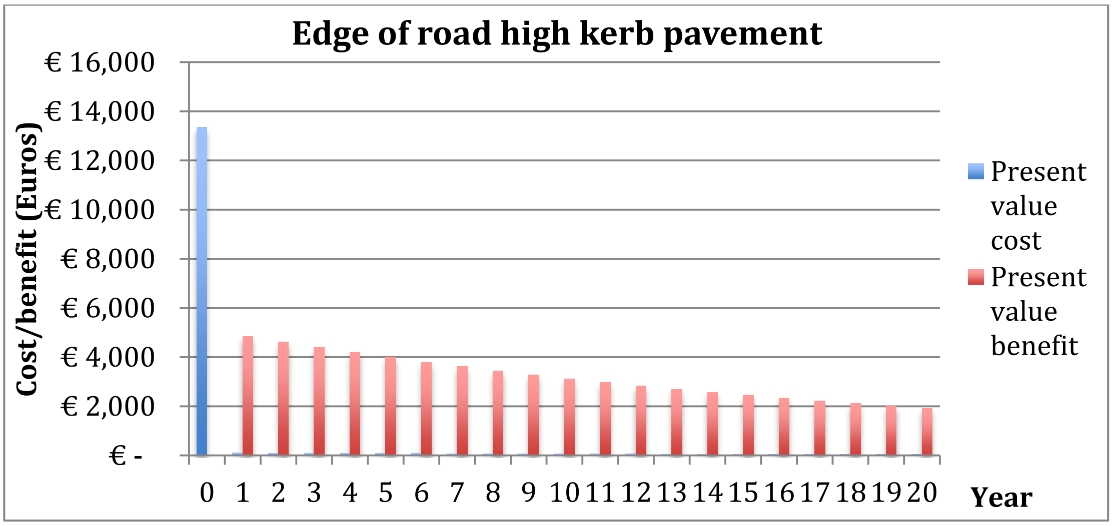


Figure 7.25 Annual costs and benefits for decreasing casualties using edge of road high kerb pavement for twenty years

Scheme selection per assessment category		
FYRR	51.71%	Speed activated signs
NPV	€ 930,473.1	M/cyclist safe road safety barrier
NPV/PVC	7.37	Speed activated signs
BCR	8.37	Speed activated signs
IRR	188%	Speed activated signs

Table 7.10 Scheme selection per assessment category

Table 7.10 show that the most beneficial, after twenty years, measure to implement is, according to NPV, motorcyclist safety barriers, but the most casualty reducing as well as profitable treatment is installing speed activated signs.

7.4 Summary

This Chapter presented the application of the road safety model in Cyprus. It showed how it can assist road authorities to choose appropriate road safety measures. The measures can be chosen with regard to their effectiveness to decrease the amount of crashes and casualties and their economic benefits to the authorities concerned. The road safety measures suggested for the Stasinou - Salaminos Avenue are speed activated warning signs and one-way network. For the Griva Digeni Avenue, the road safety measures recommended are speed activated signs.

Chapter 8:

Discussion

8 DISCUSSION

This research aimed to develop a systematic approach to road safety management in Cyprus, which may be used by the public sector authorities concerned with planning purposes. To achieve this aim, a number of objectives were assigned. This Chapter describes and discusses how these objectives were met in the project.

8.1 Objective 1: Road safety around the world and Cyprus

By examining the road safety problem in various continents around the world it was concluded that more crash fatalities per capita occur in low-income countries than in high-income countries. Comparing data from two organisations, the IRF and WHO, it was concluded that most of the fatalities per capital occur in Americas, which includes Canada and Latin America, and the Eastern Mediterranean. According to WHO estimates, where underreporting is taken into account, it was concluded that Africa and Eastern Mediterranean have the most under reported results. It is also worth mentioning that the two sources compared, have similar information but not identical. The biggest difference concerned the amount of vehicles per 1000’s of population. Some reasons for this might be that the data collected by IRF is between 2003-2008 but the WHO used 2007 data. Another reason may be that motorcycles are not included in the IRF’s calculation for vehicles per 1000’s of population.

Comparing the crashes around the world with the crashes that occur in Cyprus, it was concluded that:

- More crashes involving drivers of 4-wheeled vehicles occur than passengers in Cyprus. The trend is seem in high-income countries, whereas in lower income countries the number of fatalities of passengers in 4-wheeled vehicles is greater than drivers.

- In Cyprus more fatalities occur in urban residential and minor roads, with a speed limit less than 50kph and in motorways than the EU average.
- Less pedestrian and bicycle user fatalities exist in Cyprus, whereas, more PTW user fatalities exist compared to the EU's average.

The most common reasons for crashes worldwide occur due to alcohol, speeding, and casualties are caused from failure to wear a seatbelt and loss of control. This confirms the 1950's casual crash theory that most of the crashes occur due to the behaviour of the road user **(Shaw and Sichel, 1971)**. The values used to calculate to the most common crashes, come from past crash statistics of each country. According to Elvik and Mysen (1999), crash statistics are often incomplete, which brings to the conclusion that incomplete crash reporting increases the uncertainty of the estimated effects of road safety measures **(Hauer and Hakkert, 1988)**. Unlike comparing past crash statistics, Nilsson's taxonomy believes that crashes are results of the exposure on a road network, the crash rate that exists and the severity of the injury that a person commences from a crash. According to these, a lot of data inaccuracy comes from the road crash statistics around the world.

Even though Cyprus has decreased its crashes by more than 40% between 2001 and 2010, and although all the necessary road safety departments exist, there are still a number of improvements that may be suggested, as mentioned in Section 3.2. To address these improvements together with the general aim of decreasing crashes, it was felt necessary to consider the Road Assessment Programmes approach that has a simple methodology to reducing road crashes.

8.2 Objective 2: Methodology of the RAP organisations

By examining the RAP protocols it was concluded that iRAP's road safety toolkit was suitable to be used for Cyprus' needs. Even though the organisation's concepts have been applied in more than 60 countries around the world, the organisation is not one of its kind. A lot of governments follow the method of carrying out inspections according to Road Safety Audits, in areas where black spots exist and occasionally carry out road inspections to identify hazardous elements on the roadway **(PIARC, 2003)**. Some other organisations such as the Institute of Road Traffic Education (IRTE), which is based in India, carry out journey risk management on roads, which is similar to iRAP's star rating, but they also conduct traffic surveys and mapping of all the facilities that exists in the road. The roads are star-rated according to the hazard amount they possess to their users **(IRTE, 2011).**

The methodologies of the various RAP organisations have minor differences between them. For example iRAP specialises in implementing measures in low and middle-income countries, which need greater help. iRAP will begin helping in the funding of some projects in low and middle income countries **(iRAP, 2009a)**. On the other hand, EuroRAP, kiwiRAP, AusRAP and usRAP organisations have mentioned nothing similar. Online software exists only for iRAP **(iRAP, 2009a)**. EuroRAP aims to develop a software, that is specific to its European needs in the future **(EuroRAP, 2009)**. In this work, all RAP sources were considered to attain a complete understanding of each protocol.

8.3 Objective 3: Model creation

The iRAP's road safety toolkit was examined and it was felt that it needed further development using information from other sources. As a result a road safety model was created by:

1. Automating the iRAP's road safety toolkit,
2. Identifying additional measures using information from literature review
3. Enabling further filtering of the measures according to the area details of the road section.
4. Allowing the input of past crash data and their cost
5. Facilitating economic assessment to be automatically calculated for three road safety treatments
6. Evaluating the crash and casualty percentage reduction efficiency as well as the crash and casualty economic benefits of the selected measure using future crash data.

The final model is divided into five parts; Part A is responsible for a selection of a variety of measures suitable according to the characteristics of the road network. Part B allows for crash information and road characteristics to be input in the model as well as cost amounts for the selected measures to automatically calculate crash and casualty economic assessments for Parts C and D. Part E uses annual crash statistics to calculate the effectiveness of the measure implemented.

The road safety model was tested to check whether it is able to produce useful results. The percentage crash and casualty reduction values were obtained either from iRAP model, or the Handbook of road safety measures, by Elvik *et al* (2009). The Handbook contains percentage effectiveness values according to different crash types, for some of the measures, but these were not used, as it would be difficult to obtain trustworthy data. Part of the analysis is based on information collected from the literature, the results are preliminary and therefore there exists some uncertainty of the results. However, it is felt that if the model were systematically used by the road safety authorities concerned, it would be possible to adjust this information to local conditions and as a result produce more reliable results. This is however a long-term objective.

8.4 Objectives 4 and 5: Data collection from Cyprus according to the models inputs and outputs

The data collected from Cyprus include crash statistics and road inspections on two hazardous road avenues, as well as costs of road safety measures used, the discount rate and costs of crashes and casualties. Only KSI crashes were collected, because damage only crashes would increase the uncertainty of the results as not all of them are reported to the police.

Following the data collection, the data was analysed and compared with European and UK data to check for major differences. The following were examined:

1. Road safety measures currently used in Cyprus
2. Cyprus' crash statistic's form Vs. UK's STATS19 form
3. Road inspection accuracy according to the road inspection needs of the RAP methodologies

8.4.1 Road safety measures currently considered in Cyprus

By examining the information gathered from interviews with key staff of the Cypriot Department of Road Safety of Ministry of Communications and Works, it could be seen that little detail was provided about the road safety measures used in Cyprus, but this does not necessarily mean that the measures are not used in the country.

By carrying out the road inspections Stasinou-Salaminos and Griva-Digeni Avenues, it was observed that a lot of the road safety measures mentioned in the model created, already exist in the country. Moreover, Cyprus is focused in applying the safer people measures, addressed to increase the safety of people using the roads, as the behaviour of the Cypriot road users is not an advantageous one **(Social Attitudes to Road Traffic Risk in Europe III, 2004)**. Furthermore, the Cypriot road safety authorities are always updating their vehicle safety rules, according to the European standards, as well as staff training and road safety equipment purchased **(Morfakis, 2009)**.

The officially published budget data was provided by the Road Safety Department of the Ministry of Communications and Works, but lacked a detailed cost description of the road safety measures used. Therefore, additional cost data was used from literature review. Even though the costs collected were from other countries, the suppliers of the products are similar if not the same. Moreover, the source used has carried out a cost comparison between countries **(Elvik et. al, 2009).**

8.4.2 Comparison of Cyprus' crash statistic's form with UK's form

The crash statistics forms were first compared to the UK's STATS19 Police forms **(DfT, 2004)** to identify any major differences in the way the countries describe their crashes. From the comparison it was observed that the forms are similar. Table 6.8 shows their major differences in terms of the items that are not collected.

Table 8.1 Differences between crash record forms

STATS19 form- does not include	Cyprus form- does not include:
Damage only crashes	Special conditions on site such as: auto-traffic signal out or partially defective
Space for schematic diagram	Carriageway hazard but if any it is described in the crash description form
Description of the type of road pavement	Whether towing and articulation exist
Description of the type of pedestrian pavement	Foreign registered vehicles
Length of road pavement and pedestrian pavement	Journey purpose of the vehicle user
Time the Police/Ambulance has taken to go to the crash scene	Whether the pedestrian is a school pupil
Whether the vehicle users have been ejected from the vehicle	Whether the pedestrian was injured on the course of ‘on the road’ work
Whether seatbelt was used	
Nationality of the casualties	
Transportation used to take the casualties to the hospital and type of hospital taken to	

Most of the information not included in the Cypriot crash statistics form, apart from journey purpose, is mentioned in the crash description box. Therefore, by comparing the two forms it may be concluded that the Cypriot form includes all the details, and even more than STATS19 form but they are described in a different way. Some of the drawbacks identified in the data collection are:

1. An electronic version of the crash forms existed but was not provided. This might be because the personal information could not be deleted from the forms.
2. An electronic version of a map where the crashes have occurred does not exist. Crashes are recorded on a paper map.

3. The time of the Ambulance and Police arrival on the scene the people driving the Police/Ambulance vehicle are the ones who record the time taken, as there is no system that records the time. Therefore the answers may not be accurate.

8.4.3 Road Inspection accuracy

The road inspection was not carried out according to the needs of Road Assessment Programme, as a specially equipped vehicle with panoramic view cameras installed does not exist in Cyprus. The equipment used by the authorities are pictures taken at the black spot areas after examining the schematic diagrams of the crashes in the crash statistic's forms. A video recording was considered necessary to record the traffic behaviour in the road.

Moreover, as the road safety form used by RAP organisations during inspections was not available, a form was created using the road safety measures mentioned in the model.

Therefore, from the above it may be concluded that the road inspections procedure may not have been ideal, but were considered adequate for the objectives of this research.

8.4.4 Cost and frequency of data collection

The collection of data involves crash statistics forms, which are collected from the police every year, and the road safety inspections on the road network, which should be carried out by the road authorities. The model will not need any additional changes in the way road crash statistics data is collected, but it will require a more detailed road inspection procedure using a specially equipped vehicle. One person, who can drive past the hazardous roads, can carry out the procedure and the videos can be stored on a computer (DfT, 2006).

8.5 Objective 6: Usefulness of the model

From the interviews carried with the police and the Ministry of Communications and Works, this thesis as well as the road safety model created could offer an enhancement to the procedures currently used. For example:

1. No systematic collection and analysis of crash and road data occurs in Cyprus. Chapter 6 describes a straightforward crash analysis procedure needed for using the model.
2. An economic analysis is not carried out before implementing any measures. The model can assist in identifying more economical choices of measures and as a result the road safety budget can be used more efficiently to treat a bigger part of the road network.
3. The model is simple and does not require specialist expertise to be used. Therefore no additional staff is required.
4. The results from policies and measures are not evaluated to the required extent in Cyprus. Using the model as a tool to facilitate the management cycle (see Section 3.2.5), by implementing a road safety measure in one year and by recording the decrease in the crashes in the following years, the effectiveness of the measures in percentage and reduction in cost may be recorded.
5. It is felt that the systematic use of the model may contribute to a further decrease in the road crashes in Cyprus.

A decision maker who works for the road authorities may use the road safety model. The user of the model will not require any training, but will need to have knowledge on road safety and its measures. By implementing the model in a country and recording the effectiveness of the measures on the country's roads, the authorities may, ultimately, identify road safety measures, which are more effective in the local conditions.

The road safety model may be used to:

- Assist road safety authorities in finding a road safety measure quicker,
- Find economical solutions with a high crash or casualty reduction percentage, and
- Track the annual change in the crash or casualty percentage decrease and the money saved when a measure is implemented

8.5.1 Objective 7: Application of the model in Cyprus

The road safety model was applied to two road avenues in Cyprus. If a road safety measure can treat only one type of road user, it was considered necessary to count only the KSI numbers that involve only the specific type of users in the calculations.

A weakness of the model is that it uses the average cost of all crashes or casualties that have occurred over a number of years, to calculate the cost of each crash or casualty. Therefore, if more fatal crashes than serious occurred in the future, the average cost per crash would be different, so the results would be different.

The discount rate is a very important aspect in the economic assessment calculations. It will not affect the ranking of the measures, but a small change in the percentage rate will cause a significant difference in the calculations. Therefore, the value of the discount rate should be prudently chosen.

The road safety measures were chosen according to the ones that provide highest results in the economic analysis. Consequently, if an authority considers another measure to be more convenient for implementation, this may be done so, as long as the measure has positive NPV, NPV/PVC and BCR values.

A large number of studies that measure the effect of road safety measures are based exclusively on official crash statistics **(Elvik and Vaa, 1990)**, which, as mentioned in Section 8.1 are often incomplete **(Elvik and Mysen, 1999)**. This confirms that the effectiveness percentage values of crashes are not accurate.

A theory by Wilde (1980) that has caused confusion in the road safety world, suggests that road safety measures do not necessarily reduce the number of crashes. It confirms that people adapt them to a lower level of risk so that the number of crashes remains unchanged. But if the number of crashes decreases, instead, it is the risk level that has decreased. This theory confirms that not all road safety measures will have the intended results. Moreover, the theory of behavioural adaptation **(Evans, 1991),** believes that people do not drive cautiously on roads with road safety measures, as they feel safer. This can lead to more crashes instead of a decrease. These theories indicate the need for a continuous management process that includes feedback procedures and amendment mechanisms such as that the model that this thesis has presented.

Finally, the cost of road crashes is not calculated in Cyprus; therefore, recommended costs were used using data from the UK. This decreases the accuracy of results further. Moreover, a spread down value for casualty costs does not exist, so it cannot be compared with values from the UK. Therefore studies are required to establish such information for Cyprus so that the results from the model may become more representative of the Cypriot conditions.

8.6 Chapter conclusion

This Chapter has discussed the results from the decision support tool developed in this study to assist in the reduction of road crashes in Cyprus. Even though the results are preliminary, the work demonstrated the manner in which such a decision support tool can be introduced and used accordingly, the benefits that can be obtained and the manner in which it can support decision making of the authorities engaged in road safety.

Chapter 9:

Conclusion and future work

9 CONCLUSIONS AND FUTURE WORK

This Thesis presented a systematic methodology to develop and operate a decision support tool that may be used by authorities responsible for the safety of road networks. The main findings, outputs and recommendations of this applied research are as follows:

9.1 Main findings

1. Even though Cyprus has reduced its crashes by more than 40% between 2001 and 2010, and although all the necessary road safety departments exist, no systematic collection and analysis of crash and road data seems to exist in Cyprus.
2. Road safety measures and policies implemented are not evaluated to the required level, and
3. National Road Safety Council does not have a clear framework of duties established for each of the authorities an therefore a decision support tool is needed
4. iRAP's road safety toolkit was identified as an appropriate methodology to address the road safety problem in Cyprus.
5. iRAP's road safety toolkit was automated and was further developed using additional information from literature. A new model was suggested which may assist the road authorities in Cyprus to chose appropriate road safety measures for hazardous locations in the road network.
6. The model requires the following data to perform a crash analysis:

   a. Road crash and casualty data from the Police for a period greater than 3 years,

   b. The road safety measures used in Cyprus and their cost

c. The cost of the road crashes and casualties used in the country

9.2 Main Outputs

The main outcomes from the Thesis are:

1. A new decision support tool based on the iRAP's toolkit was implemented to carry out a detailed analysis of road safety measures.
2. The model, consists of the following modules:

   a. Part A, which enables the selection of road safety measures according to the needs of the hazardous road network under scrutiny.

   b. Part B, which facilitates the model's user to input data for the detailed analysis of the road safety measures. It considers crash and casualty costs, area characteristics and cost of each selected, from Part A, road safety measure

   c. Part C automatically performs crash economic assessment on the selected road safety measures.

   d. Part D automatically performs casualty economic assessment on the selected road safety measures.

   e. Part E estimates the future effectiveness of the measures, according to predicted road crash and casualty data.

   Using simulated data the model was tested and it was observed that it can recommend a number of road safety measures with optimal cost that may have a significant effect in reducing road crashes and/or casualties.
3. The model can, as well, calculate the future effectiveness of the measures, according to predicted road crash and casualty data.
4. The accuracy of the results may be affected by:

   a. Implementation and annual maintenance costs of the road safety measures used.

b. The discount rate value used

c. The cost of the crashes

5. All the effectiveness percentages used from literature contain some uncertainty
6. The Cypriot and UK STATS19 Police forms when compared, were found to be similar and with minor differences
7. From the Case Studies considered it was identified:

   a. In Stasinou Salaminos Avenue the speed limit of the road is not presented, delineation is not clear and a lot of secondary roads exist on the right side of the road.

   b. In Griva- Digeni Avenue, even though it is a new road, no bicycle lanes exist, the median road safety barrier is hard for the vulnerable road users and no pedestrian pavement exists for the first 300m of the road, when driving from the roundabout
8. The road safety measures suggested from the model were:

   a. For Stasinou - Salaminos Avenue are speed activated warning signs and one-way network, and

   b. For the Griva Digeni Avenue, speed activated signs and safer to motorcyclist’s road safety barriers
9. Even though the results presented contain some uncertainty; if the model developed is systematically used in a country then the information may, in the long term, be adjusted to the local conditions which would possibly enable the production of more reliable results.
10. The results are sensitive to the discount rate value, therefore it should be chosen with great care
11. The model is simple and does not require specialist expertise to be used. The user of the model will not require any training, but will need to have knowledge

on road safety and its measures. Therefore, no additional staff are required for its use.

12. The model does not require additional data to be collected with regard to the current crash statistics data collection. It requires a more detailed road inspection procedure using a specially equipped vehicle, which can be carried out as part of the current road safety inspections already taken in Cyprus.
13. The road safety model produced is easy to but requires a more detailed data collection with regard to the current data collection considered in Cyprus.

9.3 Further work

Further work may be carried out to improve the model:

1. The road crash reduction effectiveness per road crash type may be used for calculating the economic analysis equations, rather than the effectiveness for all crash types, which is currently being used
2. The model may be developed further to address different types of road users.
3. The model may be created as a stand-alone software instead of a spread sheet to enable an even easier use.
4. The economic impact of delays caused road safety measure, such as roundabouts or traffic lights, may be added to the economic assessment equations.
5. The economic impact of road safety measures on road users or on the environment may be added to the economic assessment calculations.
6. More road safety measures may be added to the model, especially for the parts of the model containing measures that address in increasing the vehicle and road user safeties.

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APPENDIX A

PART A OF THE MODEL

Accident types and treatment																					
Treatments				Treatment information					Accident Types								Area characteristics				
No.	Safer roads	Benefits	Issues to consider before implementation	Initial cost Low Medium High	Crash reduction effectiveness (*=0-10% **=10-25% ***=25-40% ****=40-60% *****=>60%)	Casualty reduction effectiveness (*=0-10% **=10-25% ***=25-40% ****=40-60% *****=>60%)	Effective life of treatment	Road User involved	Head-on	Intersections	Lane change	Manoeuvring	Rear-end	Run off road	Vehicle-Cyclist	Vehicle-Pedestrian	Area type	Functional Class of roadway	Vehicle volume Low(<5000) Medium(5000-9999) Medium-High (10000-19999) High(>20000) veh/day	Speed limit (km/hr) Low(<49) Medium(50-69) High(>70)	Number of lanes
1	Additional lane[70]	Reduces the risk of overtaking type of crashes	Start and end points of additional lanes must be designed carefully (sight distance must be suitable for the speed of traffic)	High	25%	40-60%	1-5yrs	C									Urban	Local	Medium	Medium	≤2
		Leads to an improved traffic flow	Signs telling drivers that an overtaking lane is ahead will decrease the likelihood of them overtaking in less safe areas (overtaking lanes should no be put into sites that include significant intersections or many access points)														Suburban	Collector & minor arterial	Medium -High		3 to 4
		Extra clear zone (area is free of roadside hazards)	Vehicles travelling in the opposite direction to the overtaking lane must be discouraged from using this lane (barriers might be required)					PTV									Rural / Interurban	Principal arterial	High	High	≥5
2a	Bicycle lanes (contra flow)[108,7,50,98,124,59]	Increases the use of bicycles which leads to less road congestion	Traffic calming treatments, or narrow road sections such as bridges can force bicycles out into traffic, resulting in conflicts.	Medium-High	30%	25-40%	5-10yrs	B									Suburban	Local	Medium	Medium	≤2
			Adequate sight distance must be provided around bends and at path intersections. This will also aid in improving personal security.																		
		Divides road network amongst users	Maintenance includes repairs to the pavement surface and vegetation clearance														Urban	Collector & minor arterial	Medium -High		3 to 4
			Bicycle lanes should be maintained properly to ensure that bicyclists will prefer this to riding on the shoulder or in a vehicle lane of the roadway.																	High	
		Bicyclists can safely enter and exit the bicycle lane	Surface quality must be high or it will pose a safety risk.														Rural	Principal arterial	High		≥5
			May decrease bicyclist's safety. Extra road lane might be needed.																		
2b	Wide kurb lanes (bicycles)[6,89,76,124]	Increased safety for bicyclists	Adequate sight distance must be provided around bends and at path intersections. This will also aid in improving personal security.	Low	30%	25-40%	5-10yrs	B									Suburban	Local	Medium	Medium	≤2
		Increases the use of bicycles leading to less road congestion and emmissions	Bicycle lanes should be maintained properly to ensure that bicyclists will prefer this to riding on the shoulder or in a vehicle lane of the roadway.														Urban	Collector & minor arterial	Medium -High		3 to 4

			Parking enforcements must be considered since parked vehicles force bicycles into traffic														Rural	Principal arterial	High	High	≥5
2c	Paved shoulder (bicycles)6[,124]	Increased safety for bicyclists	On-road bicycle lanes are cheaper than off-road paths if shoulder sealing is not required.	Medium-High	30%	25-40%	5-10yrs	B									Suburban	Local	Medium	Medium	≤2
			Adequate sight distance must be provided around bends and at path intersections. This will also aid in improving personal security.														Urban	Collector & minor arterial	Medium -High		
			Maintenance includes repairs to the pavement surface and vegetation clearance																		3 to 4
		Increases the use of bicycles leading to less road congestion and emissions	Bicycle lanes should be maintained properly to ensure that bicyclists will prefer this to riding on the shoulder or in a vehicle lane of the roadway.														Rural	Principal arterial	High	High	≥5
			Parking enforcements must be considered since parked vehicles force bicycles into traffic																		
2d	Combination lanes (bicycles)[7]	Increased safety for bicyclists	Traffic calming treatments, or narrow road sections such as bridges can force bicycles out into traffic, resulting in conflicts.	Low-Medium	30%	25-40%	5-10yrs	B									Suburban	Local	Medium	Low	≤2
			Adequate sight distance must be provided around bends and at path intersections. This will also aid in improving personal security.														Urban	Collector & minor arterial	Medium -High	Medium	
		Increases the use of bicycles which may lead to less road congestion	Maintenance includes repairs to the pavement surface and vegetation clearance																		3 to 4
			Bicycle lanes should be maintained properly to ensure that bicyclists will prefer this to riding on the shoulder or in a vehicle lane of the roadway.														Rural	Principal arterial	High	High	≥5
			Parking enforcements must be considered since parked vehicles force bicycles into traffic																		
2e	Bicycle paths[4]	Increased safety for bicyclists	On-road bicycle lanes are cheaper than off-road paths if shoulder sealing is not required.	Medium-High	30%	25-40%	5-10yrs	B									Suburban	Local	Medium	Medium	≤2
			Bicycle paths should be clear of obstructions. This includes keeping others such as vendors and adjacent land owners from encroaching on the path. Where an obstruction is necessary, it should be made obvious, and lines should be used to guide bicyclists safely past.														Urban	Collector & minor arterial	Medium -High		3 to 4
		Increases the use of bicycles which may lead to less road congestion	Adequate sight distance must be provided around bends and at path intersections. This will also aid in improving personal security.														Rural	Principal arterial	High	High	≥5
			Maintenance includes repairs to the pavement surface and vegetation clearance																		
2f	Bicycle signal[7,98,99]	Enables drivers to give way to bicyclists	Usually installed with bicycle lanes	Medium	30%	25-40%	5-10yrs	B									Suburban	Collector & minor arterial	Medium	Low	≤2
		Increase bicyclist's safety	Expensive														Urban		Medium -High	Medium	3 to 4
																	Rural	Principal	High	High	≥5

										arterial			
2g	Bicycle rack (inverted U, 2 bicycles)[7,98]	Increases the use of bicycles which may lead to less road congestion. Enables bicyclists to use their bikes for travelling Safety for bicycles from being stolen	More expensive than racks Need some space in the pedestrian pavement	Low	30%	25-40%	5-10yrs	B	Suburban Urban Rural	Collector & minor arterial Principal arterial Local	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
2h	Bicycle rack (ribbon or similar, 6 bicycles)[7,98]	Increases the use of bicycles which may lead to less road congestion Increases safety of bicycles from thieves	Need some space in the pedestrian pavement	Low	30%	25-40%	5-10yrs	B	Suburban Urban Rural	Collector & minor arterial Principal arterial Local	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
3	Bus lanes[98,56]	Minimizes delays Allows other vulnerable road users to use the lane when not used by buses	Reduces capacity of road from other traffic Expensive Traffic calming treatments or narrow road sections such as bridges can force bicycles out into traffic, resulting in conflicts.	High	40-60%	40-60%	25+	P PTV C HV	Urban	Collector & minor arterial	Medium Medium -High High	Medium High	≤2 3 to 4 ≥5
4	Bus lay-bys[98,99,36]	Allows continuous traffic flows Greater safety of mounting and dismounting passengers	Requires additional lane take Bus drivers may have difficulty of re-entering traffic Care should be taken when constructing the bus stop (must not be located very close to the pavement)	High	5%	75%	25+	P PTV C HV	Urban Rural Suburban	Collector & minor arterial	Medium Medium -High High	Medium High	≤2 3 to 4 ≥5
5	Central Hatching[70,98]	Fewer head-on crashes and overtaking crashes Can remove turning vehicles from through traffic lanes, resulting in fewer rear-end and turning crashes and improved traffic flow Improved delineation Some reduction in speeds Possible protection for pedestrians Encourage lane keeping and discourage overtaking Inexpensive	If rumble strips, or other raised pavement devices are also used, the risk to motorcycles and pedestrians (trip hazard) must be considered. May be used as overtaking or 3rd lane in congestion May suffer from edge deterioration after some years	Low	20%	40-60%	5-10yrs	C B HV P PTV	Urban Suburban	Collector & minor arterial Principal arterial	Medium Medium -High High	Low Medium	≤2
6	Central turning lane full length[70]	Reduced head-on crashes Reduced rear-end and turning crashes Improved traffic flow. Some reduction in speeds	Two way turning lanes should not be used at intersections Appropriate pedestrian protection should be used in areas with pedestrian activity Two way turning lanes can encourage inappropriate development along the road, so they are best used as a solution for existing roads where more advanced access controls are not possible.	Low	30%	25-40%	5-10yrs	C B HV M PTV	Suburban Urban Rural	Principal arterial Collector & minor arterial	Medium Medium -High High	Low Medium	3 to 4
7	Crash cushions[70,]	Absorb significant energy in a collision and reduce the	May require regular maintenance after crashes	Medium	45%	70%	20yrs	C HV	Suburban	Principal arterial	Medium	High	3 to 4

	[98,115,25]	severity of crashes Protect the street furniture						M PTV P									Interurban		Medium -High High		≥5
8	Delineation[70,98]	Reduced head-on road crashes Reduced run-off road crashes Reduction in pavement deterioration due to vehicles driving onto the shoulder.	In many countries line marking is ignored (and physical barriers to crossing the centre line are needed) Poorly designed or located delineators can add to crash risk Too many signs can confuse drivers. Road studs require a good quality road surface. Delineation needs to be consistent throughout an entire country The retro-reflectivity of lines and signs is an important consideration for road use at night and in the wet.	Low	30%	25-40%	5-10yrs	C B HV M P PTV													
8a	Delineation-Central median kerb[98,124]	Prevents overtaking, U-turns, head on crashes Provides pedestrian refugee in case they attempt to cross a busy road Reduces the road with-encourages speed reduction	May require additional drainage Prevent the vehicles from making U-turns or provide a U-turn road for one direction where there is no alternative roundabout If the gap does not lead to a major road, or if there is a safer place to make a turn, then it is better to close it Provide an acceleration/deceleration lane Protect waiting vehicles	High	30%	25-40%	5-10yrs	C B HV M P PTV									Urban Suburban Rural	Collector & minor arterial Local	Low Medium Medium -High High	Low Medium	≤2
8b	Delineation-Central line markings[98,114]	Improves lane discipline When raised rib lines exist they discourage overtaking in difficult locations	If local painting is of poor quality then reapplication is needed Some countries ignore line markings	Low	30%	25-40~~%~~	5-10yrs	C B HV M P PTV									Urban Rural Suburban Interurban	Local Collector & minor arterial Principal arterial	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
8c	Delineation-central raised kerb divider[98,14]	Separates opposing traffic flows Prevents lane crossing, head on collisions and U-turns	Discourages pedestrians from crossing Blocks the views Causes vehicle damage if crossed	Medium	30%	25-40%	5-10yrs	C B HV M P PTV									Urban Suburban	Collector & minor arterial	Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
8d	Delineation-Chevron boards[98]	Prevent run-of road accidents at bends Effective at night time Cost-effective	Prone to be hit regularly and need replacement	Low	30%	25-40%	5-10yrs	C B HV M P PTV									Suburban Rural Interurban	Collector & minor arterial Principal arterial	Low Medium Medium -High High	Medium High	≤2 3 to 4 ≥5
8e	Delineation- edge marker posts[98,32]	Low maintenance needed Absorbs the speed impact Causes minimal damage to vehicles during collision	Can increase average speed at night time Must be maximum 0.6m above the ground so that it does not impede the visibility of road users They must be at centres not less than 4.5m They are very effective at night hours if they are reflective	Low	30%	25-40%	5-10yrs	C B HV M P PTV									Suburban Rural Interurban	Collector & minor arterial Principal arterial	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
8f	Delineation- edge lines[98]	Encourages the drivers to stay in their lane It helps drivers and cyclists	It needs regular line marking	Low	30%	25-40%	5-10yrs	C B HV									Urban Suburban	Local Collector	Low Medium	Low Medium	≤2 3 to 4

								M	Rural	& minor arterial	Medium -High		
		In dark hours warns drives						P	Interurban	Principal arterial	High	High	≥5
								PTV					
8g	Informative signs[98,16]	Have the potential to reduce time travelled by directing traffic	Required to be put in all the road network	Low	30%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
								B					
								HV	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
		Provide warning of junction ahead	Avoid overloading the signs. There should be sign smplification and consistency					M	Rural	Principal arterial	Medium -High		
								P	Interurban		High	High	≥5
								PTV					
8h	Delineation- retro-reflective pavement markers (cat's eyes)[98,61]	Encourages lane keeping	On some surfaces they are difficult to attach	Low	30%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
		Useful on poorly lit roads						B					
		Visible in wet surfaces						HV	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
		Warn when driven over						M	Rural		Medium -High		
		Require low maintenance						P	Interurban	Principal arterial	High	High	≥5
								PTV					
8i	Delineation raised rib edge lines[98]	Alerts inattentive or drowsy/drunk driver	Difficult to refill	Medium	30%	25-40%	5-10yrs	C	Rural	Local	Low	Low	≤2
								B					
		Helps in pedestrian protection						HV	Suburban	Collector & minor arterial	Medium	Medium	
								M			Medium -High		3 to 4
		Decreases run-off road accidents						P	Interurban			High	
								PTV			High		
8j	Regulatory signs[98,16]	Encourage drivers to follow the law	Usually ignored by drivers	Low	30%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
								B					
								HV	Rural	Collector & minor arterial	Medium	Medium	3 to 4
			Require strict enforcement					M	Suburban				
								P	Interurban	Principal arterial	Medium -High	High	≥5
			Keep signs simplified and consistent. Avoid over signing					PTV			High		
8k	Delineation-Road marking[98]	Placed on the driver's line of sight	If signs are not input then a lot of accidents can be caused	Low	30%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
								B					
								HV	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
		Efficient in stopping the vehicles and drivers to look before entering a main road	Frequent repainting is required					M	Rural	Principal arterial	Medium -High		
								P	Interurban		High	High	≥5
								PTV					
8l	Speed activated signs	Slow vehicle down at dangerous locations	They have to be connected to an electricity source or have a battery that lasts for 14 days	Medium	58%	30%	5-10yrs	C	Urban	Local	Low	Low	≤2
								B					
		Effective at reducing the speed of vehicles	The sign should seat at a place where they can be visible and inform					HV	Suburban	Collector & minor arterial	Medium	Medium	
								M	Rural	Principal arterial	Medium -High		3 to 4
		Low operating cost	The sign should be in good working condition all the time					P	Interurban		High	High	
								PTV					
8m	Delineation-Vehicle activated warning	Slow vehicles down at dangerous locations since they are targeted to drivers that make errors	Expensive to install	Medium	30%	25-40%	5-10yrs	C	Rural	Principal arterial	Medium	Medium	≤2

	signs[98,119,7 9,25,114,36,77]	These signs are triggered by speed or height and are timed to flash on as the triggering vehicle is close, so to attract the driver's attention	May need special provision of electricity supply Requires regular maintenance and can be vandalised					B HV M P PTV	Interurban		Medium -High High	High	3 to 4 ≥5
8n	Warning signs[98,16]	Warn drivers of road features ahead maintenance Low required	Can be stolen or vandalised Keep sign simplification and consistency otherwise driver might get confused.	Low	30%	25-40%	5-10yrs	C B HV M P PTV	Urban Suburban Rural Interurban	Local Collector & minor arterial Principal arterial	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
8o	Gateways[9 8,124,59]	Emphasize to drivers that they are entering a residential area Around 10% decrease in speed Gateway can be designed to be aesthetically pleasant in an area	It is better to place a sign on the site of the road than on the pavement surface since drivers	Medium-High	>60%	10-25%	10-20yrs	C B HV M P PTV	Urban Rural	Local Collector & minor arterial	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
8p	Speed cameras8[2 4,40,26]	Decreases the speed of Vehicles Improves road safety and significantly reduces crashes Can decrease the amount of vehicles that exceed the speed limit by 30% The use of camera installation is more accepted by the road users	Some drivers only slow down at camera sites The cameras are better to be located at sited where there have been more than a certain amount of crashes They are expensive to install	High	0-10%	10-25%	5-10yrs	C HV M PTV	Rural Urban Interurban	Collector & minor arterial Principal arterial	Medium -High High	Medium High	≤2 3 to 4 ≥5
9	Duplication[70]	Separation of the opposing traffic flows, and therefore reduced head-on crashes Simpler traffic movements leading to less opportunity for conflict Redirection of turning movements to safer locations Protection for turning traffic Reduced traffic congestion	This treatment is costly, and other lower cost treatments (such as median barrier installation) should also be considered. Requires a large amount of land Community acceptance of the medians that restrict turning movements or restrict pedestrian movements may be an issue	High	50%	10-25%	1-5yrs	C HV PTV	Rural Urban Interurban	Collector & minor arterial Principal arterial	High	Medium High	≤2 3 to 4 ≥5
10	Intersection-Delineation[70]	Reduction in intersection crashes. Reductions in speed. Awareness of the intersection is increased. Vehicles are directed to a clearer path through the intersection Median islands (if used) can create a refugee for pedestrians crossing the road, thus reducing the likelihood of pedestrian/vehicle crashes	Old line marking should be properly removed (e.g.. by grinding) or it may remain visible and confuse drivers. Warning signs should be placed at sufficient distance from the intersection to ensure drivers have enough time to take necessary action (e.g. to slow down). Warning signs and median islands should not be located or designed in such a way as to be hazards.	Low	30%	25-40%	1-5yrs	C HV M PTV	Urban Suburban Rural Interurban	Local Collector & minor arterial Principal arterial	Low Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
11	Intersection-Turn	Reduced rear-end and sideswipe crashes.	Painted turn lanes must be clearly delineated and have good sight distance.	Low-Medium	30%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2

	lanes (Un-signalised)[70]	Reduced loss of control while turning crashes.	Turn lanes should be long enough to allow a vehicle time to stop within it (clear of through traffic).					HV													3 to 4
		Improved traffic flow.	If a turn lane is too long, through drivers may enter the lane by mistake.					M									Suburban	Collector & minor arterial	Medium	Medium	
		Increased intersection capacity.	Signs at the start of the turning lane may help prevent this.					PTV									Rural		Medium -High		≥5
			Installing turn lanes can increase the width of the intersection and cause problems for pedestrians trying to cross. One solution is to provide a pedestrian refuge island in the median.														Interurban	Principal arterial	High	High	
12	Intersection-Turn lanes (Signalised)70[98,99,59,5]	Reduced crashes between turning vehicles and oncoming through traffic.	Adding turn signals reduces intersection capacity.	Low-Medium	45%	10-25%	1-5yrs	C									Urban	Collector & minor arterial	Medium	Medium	≤2
		Reduced severity of crashes throughout the intersection.	It may be necessary to lengthen turn lanes to fit longer traffic queues.					HV									Suburban		Medium -High		3 to 4
		Reduced vehicle-pedestrian crashes.	Other signal changes can be used to improve intersection capacity when signalised turns are implemented.					M									Rural		High	High	
								PTV													≥5
13	Intersection-Signalise70[97,98,58,4]	Can increase intersection capacity	In countries with poor compliance with road rules, signalising an intersection may have no safety benefit and can reduce the capacity of an intersection	Medium	15-30%	25-40~~%~~	1-5yrs	C									Urban	Collector & minor arterial	Medium	Low	≤2
			Signals used at intersections with low traffic flows and fixed timings are likely to be disobeyed																		
			Well designed traffic signals will usually reduce total crashes but will sometimes increase specific crash types (e.g. rear-end crashes)					HV											Medium -High		
		Can reduce certain types of crashes (especially right-angle crashes)	Traffic signals should not be used in high speed locations.														Suburban			Medium	3 to 4
			In urban areas it can be difficult to ensure that traffic signals are visible enough															Principal arterial	High		
			Before installing traffic signals, information on traffic volumes, pedestrian volumes, intersection approach speeds and previous crashes at the site should be considered.					M													
		Can improve pedestrian and cyclist safety	The introduction of traffic signals in a region could increase crashes unless all drivers know the meaning of the signals														Rural			High	≥5
		Usually put when entering a major busy road with higher speed limit	Traffic signals need continuous power					PTV													
			Both traffic signals and vehicle detection equipment are prone to malfunction so good maintenance is required																		
14	Intersection-grade separation[70]	Reduction in intersection crash types.	A range of design options should be considered before an interchange layout is chosen.	High	50%	10-25%	10-25yrs	C									Interurban	Principal arterial	High	High	≤2
		Improved traffic flow.	An interchange should allow bicycle and pedestrian traffic to pass through the area.																		3 to 4
		Simplifies potentially complex movements typical at 'T' and 'X' intersections.	Adding on-ramps and off-ramps to a freeway can increase high speed weaving and merging crashes.					HV													
		Removes the cost of running at-grade traffic control hardware.	Interchanges can negatively impact the appearance of an area.																		
			Interchanges may separate communities due to their size.					M													≥5

			Grade separating rail crossings can involve vertical realignment of a long length of rail track (because trains cannot travel on steep grades), which is very costly.					PTV					
15	Intersection-roundabout [70,79,65,59]	Minimal delays at lower traffic volumes.	Solid structures should not be located on the central island High painted kerbs around the island can reduce the risk of it being run into.	Medium-High	55-70%	0-10%	1-5yrs	C	Suburban	Principal arterial	Medium	Low	≤2
		Little maintenance required	Poor visibility on the approach to roundabouts, or high entry speeds, can lead to crashes					HV			Medium -High	Medium	3 to 4
		Allows vehicles to enter the junction safely avoiding manoeuvres	Facilities to help pedestrians cross the arms of the intersection should be provided in most urban locations						Interurban		High		
		Crash severity is usually lower than at cross intersections.	Roundabouts can be difficult for large vehicles, particularly buses, to use Designers should be conscious of the risk that roundabouts can be present for cyclists and other slow vehicles, such as animal drawn vehicles					PTV				High	≥5
16	Lane Widening [70,12]	Reduced head-on crashes.	Lane widening can be costly, especially if land must be purchased.	Medium	5-19%	40-60%	1-5yrs	C	Urban	Collector & minor arterial	Medium	Low	≤2
		Reduced run-off-road crashes.	Making lanes wider than 3.6 metres does little to reduce crashes. A lane that is too wide might be used as two lanes and this can increase sideswipe crashes.					B	Suburban		Medium -High	Medium	3 to 4
		Reduced sideswipe crashes.	Because vehicle speeds increase when roads are widened, lanes should be widened only when it is known that the narrow lane width is causing crashes.					HV	Rural	Principal arterial	High	High	≥5
		Improved traffic flow.						PTV	Interurban				
17	Lighting [98,124]	Increases cyclist and pedestrian safety	High cost to maintain and operate	Low-Medium	>60%	10-25%	10-20yrs	C	Urban	Local	Low	Low	≤2
		Lights on both sides should be installed for better illumination	Impact absorbing lightening is better to be installed to decrease severity of runoff roads					B	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
								HV	Rural		Medium -High		
		Improves visibility of drivers and vulnerable road users						M		Principal arterial	High	High	
								P	Interurban				≥5
								PTV					
18	Median barrier [70,98,59]	Reduced head-on crashes.	Medians can restrict traffic flow if a vehicle breaks down, and can block emergency vehicles.	High	50%	10-25%	1-5yrs	C	Suburban	Collector & minor arterial	Medium	Medium	≤2
		Barriers can be produced to be safer to motorcyclists by installing an attachment that has small cost and may decrease casualties by 50% and crashes by 25%	Pedestrians are often reluctant to make wide detours, and so may attempt to cross at locations with barriers installed, resulting in dangerous pedestrian activity.						Rural				
		Barriers can be centre poles, guard fences and free central reserve	In some regions the materials used in median barriers is often stolen.					HV			Medium -High		3 to 4
			Green central reserves have high maintenance costs and are less effective reducing head-on crashes than guard fences										
			Centre poles do not protect head-on collisions from cars that leave their lane					PTV	Interurban	Principal arterial	High	High	

		Can shift turning movements to safer locations.	The ends of median barriers must be well designed or they can be a safety hazard. Clear signs and enforcement are needed to ensure that drivers do not drive on the wrong side of the median barrier.										≥5
19	Motorcycle lanes[70,98,63]	Reduced vehicle to motorcycle crashes	Unless they are well designed, motorcycle lanes can increase motorcycle to motorcycle crashes. Motorcycle lanes should be at least 1.8 meters wide (for each direction). Motorcycle lanes should be at least 3.6 meters wide if overtaking is permitted. Horizontal and vertical alignment must be suitable for speeds at which motorcycles will be travelling on the lane. Off-ramps must be designed so that motorcyclists exiting the lane are not at risk of being hit from behind by other motorcyclists. Crash barrier support posts facing the lane are a hazard and must be protected. Centre line marking should be provided in lanes that are wider than 3.5 metres. The surface of motorcycle lanes must be properly maintained. Because motorcycles have only two points of contact with the road, slippery or rough road surfaces are a crash risk.	Medium	40%	25-40%	1-5yrs	HV	Rural	Collector & minor arterial	Medium	Low	≤2
								M			Medium -High	Medium	3 to 4
								PTV	Urban	Principal arterial	High	High	≥5
20	One way network[70,98,59]	Reduced pedestrian crashes (pedestrians only need to look for traffic in one direction, and there are more orderly gaps in traffic).	Because speeds can increase on one-way networks, traffic calming measures may be required (especially if the lanes are wide).	Medium	Low	40-60%	5-10yrs	C	Urban	Local	Low	Low	≤2
		Reduced head-on and intersection crashes.	Before a network is made one-way, traffic circulation in the area surrounding the network must be considered.					HV		Collector & minor arterial			
		Can allow better traffic signal timing.	Converting a network to one-way can be costly as it may involve rebuilding traffic signals, repainting line marking and replacing and adding signage.					M	Rural		Medium	Medium	
		May allow improved parking						PTV					
21	Parking improvements[70]	Converting angle parking to parallel parking provides extra road space.	Converting angle parking to parallel parking requires replacement of line marking. Changes to parking signs and kerbs may also be necessary.	Low-Medium	20-40%	25-40%	10-20yrs	C B	Urban	Local	Low	Low	≤2
		Reduced crashes, including those involving pedestrians.	The community and business owners often object to the removal of parking in commercial centres.					HV M	Suburban	Collector & minor arterial	Medium Medium -High	Medium	3 to 4
		Banning parking lessens the potential for sideswipe or rear-ends crashes.						P PTV	Rural		High	High	≥5
21 a	Amenity trailing[68]	Cyclists can secure their bicycles on them.	Prone to damage	Medium	0-40%	25-40%	10-20yrs	C B	Urban	Local	Low	Low	≤2
		Guides pedestrians to park on a safer road	1.5-2.5m long with 50mm diameter					HV M	Suburban	Collector & minor arterial	Medium Medium -High	Medium	3 to 4
		Prevents drivers from parking on the footpaths						P PTV	Rural		High	High	≥5
21 b	Bollards[68,16,58]	Prevents vehicles for mounting on the footpath and leaves space to pedestrians.	Can become a hazard to blind pedestrians	Low	0-10%	10-25%	10-20yrs	C B	Urban	Local	Low	Low	≤2
								HV	Suburban		Medium	Medium	3 to 4

		Defines the footpath at raised junctions and can protect shops from 'ram' raids	Might need a lot of maintenance if cars hit them regularly					M		Collector & minor arterial	Medium -High		
								P PTV	Rural		High	High	≥5
21 c	Guard rails/ pedestrian barriers[98,36]	Guides pedestrians to a safe way to cross	Prone to damage	Medium	25-40%	25-40%	10-20yrs	C B	Urban	Local	Low	Low	≤2
		Prevents drivers from parking on a footpath						HV			Medium		
								M	Suburban	Collector & minor arterial	Medium ZHigh	Medium	3 to 4
		Can be used in areas where problems with illegal parking and parking on footpaths are						P PTV	Rural		High	High	≥5
21 d	High kerb (edge of road pavement)[98]	Prevents vehicles from mounting on the footpath.	Hazardous for pedestrians that are walking close to its edge and for pedestrians crossing (especially people on wheelchairs)	Medium-High	10-25%	0-10%	20+yrs	C B	Urban	Local	Low	Low	≤2
								HV			Medium		
		Defends from out-of control vehicles						M	Suburban	Collector & minor arterial	Medium -High	Medium	3 to 4
								P PTV	Rural		High	High	≥5
21 e	Raised planters[98]	Prevent drivers from parking on the footpath	Needs high maintenance	High	0-10%	10-25%	20+yrs	C B	Urban	Local	Low	Low	≤2
								HV			Medium		
		Acts as a physical barrier to protects the vehicles from mounting on the footpath	requires a lot of footpath area					M	Suburban	Collector & minor arterial	Medium -High	Medium	3 to 4
								P PTV	Rural		High	High	≥5
21f	Wire railings[98]	Cyclists can secure their bicycles on them.	Prone to damage	Medium	0-40%	25-40%	10-20yrs	C B	Urban	Local	Low	Low	≤2
		Guides pedestrians to park on a safer road	0.5-1m high, supported by posts 1-3m apart					HV			Medium		
								M	Suburban	Collector & minor arterial	Medium -High	Medium	3 to 4
		Prevents drivers from parking on the footpaths	Can occupy more space on the footpath					P PTV	Rural		High	High	≥5
22	Pedestrian crossing-Bridge[98,124,59]	Reduced pedestrian crashes.	Pedestrians are obliged to take a longer route to cross the road.	High	70%	0-10%	1-5yrs	P	Suburban	Principal arterial	Medium	High	3 to 4
		Totally separates pedestrians from vehicles	Requires barriers to channel pedestrians to use the bridge										
			Expensive										
		Traffic flow improvements.	They sometimes become crowded with street traders										
			if they are not well-lit and patrolled, they may pose a personal security risk underpasses can flood and quickly become dirty.								Medium -High		
		Can be used by disabled pedestrians and bicyclists	Pedestrians will only use crossing facilities located at, or very near, to where they want to cross the road. Pedestrian fencing can be used to encourage pedestrians to use crossing facilities.					B	Interurban			Medium	≥5
			Where a lot of bicyclist traffic is present a pedestrian underpass or overpass can be used by cyclists as well as pedestrians, but this will require shallow approach ramps and therefore additional land.								High		
23	Pedestrian crossing-Underpass[13,98,124,59]	Safe crossing for pedestrian	Requires anti-vandalism lighting for pedestrian safety and security	High	70%	0-10%	1-5yrs	P	Interurban	Principal arterial	Medium	Medium	3 to 4
		Less visually intrusive than bridge	Requires provision of appropriate drainage										
			Worries about crime at night								Medium		

		Reduced pedestrian crashes.	They sometimes become crowded with street traders																-High		
		Traffic flow improvements.	pedestrians will avoid them if there are a lot of steps to climb up or down																		
		Can be used by disabled pedestrians and bicyclists	Pedestrians will only use crossings located at, or very near, to where they want to cross. Pedestrian fencing can be used to encourage use of pedestrian crossings.					B									Suburban		High	High	≥5
			Additional ramp and shallow steps are required																		
24	Pedestrian crossing signalised[7] 0,98,8,99,59,5,6	Improved crossing facilities for pedestrians.	Pedestrians will only use crossings located at, or very near, to where they want to cross. Pedestrian fencing can be used to encourage use of pedestrian crossings.	Medium	30%	25-40%	1-5yrs	P									Urban	Collector & minor arterial	Medium	Low	≤2
		Reduced pedestrian crashes.	Through traffic must be able to see pedestrian crossing points in time to stop for them. Advance warning signs should be used if visibility is poor.														Suburban		Medium -High	Medium	
			Parking should be removed from near pedestrian crossings to provide adequate sight distance.														Rural	Principal arterial	High	High	3 to 4
25	Pedestrian crossing-un-signalised[7] 0,98,8,124	A clearly defined crossing point where pedestrians are 'expected'.	Un-signalised crossings are not suitable where traffic volumes or speeds are high.	Low-Medium	>50%	25-40%	5-10yrs	P									Urban	Local	Low	Low	≤2
			Pedestrians will only use crossings located at, or very near, to where they want to cross. Pedestrian fencing can be used to encourage use of pedestrian crossings.																		
		Disruption to traffic flow is comparatively low.	Through traffic must be able to see pedestrian crossing points in time to stop for them. Advance warning signs should be used if visibility is poor.																		
			Other high visibility devices (such as flashing lights) may also be used.														Suburban				
			Parking should be removed from near pedestrian crossings to provide adequate sight distance.															Collector & minor arterial	Medium	Medium	3 to 4
		Reduced pedestrian crashes if installed at appropriate locations, and if pedestrian priority is enforced.	Crossing will only be effective if other road users give way to pedestrians.														Rural		Medium -High		
			Education and enforcement may be necessary to ensure pedestrians have priority.																		
26	Pedestrian crossing-Zebra[98,8]	Requires no maintenance	Might require barriers to channel pedestrians to it without the risk of getting injured or crossing before the crossing.	Low	40-60%	25-40%	5-10yrs	P									Urban	Collector & minor arterial	Low	Low	≤2
		Allows pedestrians to cross having higher priority	Drivers often do not give way to pedestrians so pedestrians have to wait														Suburban		Medium	Medium	3 to 4
		Can be used by disabled pedestrians	Used in areas with low traffic and pedestrian volume																Medium -High		
27	Pedestrian footway 98,30,124	Increased safety for pedestrians.	A maintenance program is needed to ensure that footways are kept clean and level, and that plants do not block the path.	Low-Medium	10-25%	40-60%	1-5yrs	HV									Urban	Collector & minor arterial	Low	Low	≤2
		Increased use of walking as transport (eased road congestion).	Signage should be used to warn drivers of pedestrians if the road shoulder is used as a footway.					P									Suburban		Medium	Medium	3 to 4
								PTV									Rural	Principal arterial	Medium -High	High	≥5
																			High		
27 a	Raised kerb	Increased safety for pedestrians.	High costs if they are installed along most routes	Medium-High	10-25%	40-60%	1-5yrs	HV									Urban	Collector & minor	Low	Low	≤2
								P									Rural		Medium	Medium	3 to 4

	footpath[98,30,124]		Additional kerbside drainage gullies required					PTV									Suburban	arterial Principal arterial	Medium -High High	High	≥5
27 b	Barrier kerb footpath[98,30]	Defines the footpath in the road network Lower cost than raised kerb footpaths	Can cause severe injured in motorcycle collisions	Medium	10-25%	40-60%	1-5yrs	HV P PTV									Urban Suburban	Collector & minor arterial Principal arterial	Medium Medium -High High	Medium High	≤2 3 to 4 ≥5
27 c	Segregated footpath[98,30]	Drainage can be input between pavement and footpath	More land is needed	High	10-25%	40-60%	1-5yrs	HV P PTV									Urban Interurban	Principal arterial	High	Medium High	≤2 3 to 4 ≥5
28	Pedestrian pelican crossing[98,8]	Located where there is a high volume of pedestrians Vehicles stop because of the traffic lights Increases pedestrian safety and reduces waiting to cross the road Reduces vehicle waiting when a lot of pedestrians cross the roads Can be used by disabled pedestrians	Sometimes pedestrians press the button but do not cross the road. This leads to a halt in traffic with no pedestrians crossing	High	25-40%	25-40%	1-5yrs	P									Urban	Collector & minor arterial Principal arterial	Medium Medium -High High	Medium High	≤2 3 to 4
29	Pedestrian Raised crossing[98,8]	Used in conjunction with round top or flat top road humps Pedestrians are more visible to drivers	Requires additional drainage Drivers may not give way to pedestrians	Medium	>60	Low	5-10yrs	P									Urban	Collector & minor arterial Local	Low Medium	Low Medium	≤2 3 to 4
30	Pedestrian refugee island[70,98,124,99]	Reduced pedestrian crashes. Separating traffic moving in opposite directions to reduce head-on and overtaking crashes. Separating traffic moving in opposite directions to reduce head-on and overtaking crashes. Can be used by disabled pedestrians Must be at least 2m wide so that it can assist bicyclists as well otherwise wide railings can be used so that bicyclists do not step on the road	Pedestrian refuge islands must be clearly visible to traffic during both day and night. Refuge islands should be placed where there is a demand from pedestrians to cross. Where cyclists are present, refuge islands must not narrow the lanes too much. Turning movements from driveways and intersections must be considered in planning the location of pedestrian refuges. Should not obstruct visibility of road users Continuous medians might lead to an increase in traffic speed	Medium	15%	40-60%	1-5yrs	P									Urban Suburban Rural	Local Collector & minor arterial	Medium Medium -High High	Low Medium	≤2 3 to 4
31	Pedestrian toucan crossing[98,119]	Located at areas where cyclists and pedestrians are likely to cross the road. Vehicles are more likely to stop because of the traffic lights.	Requires additional road space to accommodate both road users	High	25-40%	25-40%	1-5yrs	P									Urban Suburban	Local	Medium Medium -High	Low	≤2

		Reduces the waiting of pedestrians when load of traffic and vice versa							Rural	Collector & minor arterial	High	Medium	3 to 4
		Can be used by disabled pedestrians											
32	Regulate roadside commercial activity[70]	Reduced 'turning' crashes.	Roads should be designed to allow for changes in land-use over time.	Low-Medium	crash amount doubles at 15stores/km	40-60%	10-20yrs	C	Urban	Local	Low	Low	≤2
			Building regulations should specify the limits which buildings may not extend beyond.					B					
		Reduced pedestrian crashes.	Illegal development can only be controlled if there are alternative sites for commercial activity.					HV			Medium	Medium	3 to 4
			Where activities near the road are permitted, countermeasures may be required to maintain safety.					M	Rural	Collector & minor arterial	Medium -High		
		Improved traffic flow.	Where activities near the road are permitted, they should be restricted to one side of the road.					P			High	High	≥5
								PTV					
33	Realignment-horizontal[70]	Reduced risk of head-on crashes.	Road realignment is costly and time consuming because it usually involves rebuilding a section of road.	High	10-50%	25-40%	1-5yrs	C	Interurban	Local	Low	Low	≤2
		Reduced risk of run-off-road crashes.	Horizontal curve realignments require considerable design and construction effort. These projects may also require the purchase of land.					HV	Urban	Collector & minor arterial	Medium	Medium	3 to 4
		Better traffic flow.	Horizontal realignments often include lane widening, shoulder improvement, and delineation treatments.					M	Suburban	Principal arterial	Medium -High	High	≥5
								PTV	Rural		High		
34	Realignment-vertical[70]	Reduced risk of head-on, intersection and overtaking crashes.	Vertical curve realignments require a lot of design and construction effort, and a lot of time and money. It is much better to design the road well before it is built than to rebuild it.	High	50%	10-25%	1-5yrs	C	Interurban	Local	Low	Low	≤2
		Reduced risk of vehicle equipment failure (steep grades).						HV	Urban	Collector & minor arterial	Medium	Medium	3 to 4
		More uniform traffic flow.	Horizontal and vertical alignments should be considered together. Poor combinations of vertical and horizontal alignment can confuse drivers and lead to dangerous situations					M	Suburban	Principal arterial	Medium -High	High	≥5
								PTV	Rural		High		
35	Restrict/ Combine direct access points[70]	Reduces the number of potential conflict points.	In most situations, it would be difficult to justify and fund construction of a service road on its own merits due to high cost. This type of project is generally undertaken as part of a major road duplication project.	High	65%	40-60%	1-5yrs	C	Urban	Collector & minor arterial	Low	Low	≤2
		Reduces traffic friction and improves flow on the main road.						B					
			Minor intersection closures can often be achieved in cooperation with the local road authority, especially when safety at these intersections has been a subject of repeated complaint					HV			Medium	Medium	3 to 4
		Potential to reduce pedestrian risks.						M	Rural	Principal arterial	Medium -High		
		Improved traffic management at upgraded access points.						P	Interurban		High	High	≥5
								PTV					
36	Roadside safety-Barriers[70,98,99]	If properly designed, barriers should reduce the severity of crashes involving 'out of control' vehicles.	A safety barrier should only be built if the existing hazard cannot be removed (see hazard removal).	Medium	40%	25-40%	5-10yrs	C	Suburban	Collector & minor arterial	Low	Low	≤2
			The end points of barriers can be dangerous if not properly designed (see Related Images for examples of poor end points).					HV	Rural		Medium		
			Safety barriers should not be close enough to the road to be a hazard to vehicles.					PTV		Principal arterial	Medium -High	Medium	3 to 4

			Minor damage can reduce the safety benefits of barriers if they are not properly repaired. Roadside barriers can be a hazard to motorcyclists.						Interurban		High	High	≥5
37	Roadside safety-Hazard removal[70]	Reduced severity of run-off-road crashes.	After roadside hazards are removed, the roadside should be left in a safe condition. Large stumps and deep holes are hazards that may remain after removal of a tree.	Low-Medium	10-45%	25-40%	10-20yrs	C	Urban	Local	Low	Low	≤2
			Replacement of removed trees with more appropriate plants should be considered, otherwise re-growth or soil erosion may affect the site.					HV	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
		Reduced road furniture repair costs associated with crash damage.	It is not always possible to remove, replace or put barriers around roadside hazards, particularly in urban areas where space is limited. Reducing vehicle speeds is an alternative solution.					M	Rural	Principal arterial	Medium -High	High	≥5
								PTV	Interurban		High		
38	Road surface upgrades[70]	Improved safety for roads where a lot of crashes happen, especially in wet weather.	Skid resistance improvements gained by resurfacing will lessen over time, especially on roads with lots of heavy vehicle traffic and in tropical climates. As such, regular monitoring of skid resistance is important.	Medium-High	35%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
		Provides the opportunity to fix other road surface problems, such as cross fall and rutting.	The skid resistance of the entire road surface (right up to the edge) should be maintained for the safety of bicycles and other slow-moving vehicles.					HV	Suburban	Collector & minor arterial	Medium	Medium	3 to 4
		Provides the opportunity for adding or replacing road surface delineation such as painted markings or reflective road studs.	Warning signs should not be considered a solution to the problem of poor skid resistance. Warning signs can be used temporarily, until other solutions are carried out.					M	Rural	Principal arterial	Medium -High	High	≥5
								PTV	Interurban		High		
39	Rumble strips[70,98]	Reduced run-off-road and head-on crashes.	Longitudinal rumble strips may be a hazard to cyclists and motorcyclists.	Low-Medium	20%	40-60%	10-20yrs	C	Urban	Collector & minor arterial	Medium	Low	≤2
		Improved visibility of edge lines or centre lines during wet weather.	Gaps in the rumble strips may be needed in some areas to allow water to drain from the road surface.					HV					
		Potential for reduced maintenance of road shoulder.	The noise made by rumble strips can de difficult for drivers of larger vehicles to hear.						Rural	Principal arterial	Medium -High	Medium	3 to 4
		Advanced warning to hazards.	Rumble strips should not be used near housing because of the noise they make.					PTV	Interurban		High	High	≥5
		Can be placed closer to a hazard so that it gives the illusion of increasing speed	There must be at least 150 mm of sealed road outside longitudinal rumble strips or the road may be weakened.										
40	Service road[70]	Crash reductions (including parking and pedestrian crashes).	Service roads require large amounts of space. Where space is limited, a service road may fit behind the properties.	High	25-40%	25-40%	1-5yrs	C	Urban	Collector & minor arterial	Medium	Low	≤2
								HV				Medium	
								M	Interurban	Principal arterial	Medium -High		3 to 4
		Safer loading/ unloading of commercial vehicles.	Parking and other potential visual obstructions should be carefully controlled where service lanes re-join the main road.					P			High	High	≥5
								PTV					
41	Shoulder sealing[70]	Reduce run-off-road crashes. Reduce and head-on crashes.	Shoulder widening and shoulder sealing can be done at the same time to reduce costs. Shoulder widening above 1.5m might result in an increase of crashes	Medium-High	30%	25-40%	1-5yrs	C	Urban	Local	Low	Low	≤2

		Wider shoulders allow vehicles to pull off the road in emergency situations and have clearance from through traffic (however crashes can occur when vehicles attempt to re-join the traffic).	Edge lining can be improved at the time of upgrading the shoulder (especially when sealing).					B	Interurban		Medium	Medium	3 to 4
		Sealed shoulders provide a safe cycling space, and can be marked as bicycle lanes.						HV	Suburban	Collector & minor arterial	Medium -High	High	≥5
		Sealed shoulders provide structural support to the road pavement.	Shoulders should not be too wide or drivers may use them as an additional lane.					M		Principal arterial	High		
		Sealing can reduce 'edge drop' (where there is a difference between the height of the road surface and the height of the shoulder). Edge drop can make it harder for vehicles which have left the road to get back onto the road.						P	Rural				
								PTV					
42	Speed reducing treatments (speed humps, gateway treatments, roundabouts, pavement narrowing and treatments at curves)[70]	Reduced severity of all crash types and reduced likelihood of many crash types.	Speed humps and other devices need to be well designed to provide maximum safety benefits (see Technical References for details).	Low	50%	10-25%	5-10yrs	C					
			Traffic calming devices can impede emergency vehicles and cause discomfort for bus passengers. Careful consultation is required before they are installed.					B					
			Some treatments types can act as roadside hazards.					HV					
			Speed limits should seem realistic to drivers or they will not be adhered to.					M					
								P					
								PTV					
42 a	Mini roundabout[98]	Helps traffic from minor road to emerge	Needs to be well marked giving advanced warning to the drivers	Medium	>60%	40-60%	5-10yrs	C	Urban	Local	Low	Low	≤2
		Encourages slow approaches from the arms of the junction	May need local enforcement					HV	Suburban	Collector & minor arterial			
			Less safe for 2-wheelers, pedestrians and cyclists					PTV	Rural		Medium	Medium	
42 b	Chicanes[98,124,59]	The speed of cars can decrease by 20mph and heavy vehicles by 10mph.	Maximum acceptability needs to be acquired from the people that leave near them.	Medium	>60%	>60%	5-10yrs	C	Suburban	Local	Low	Low	≤2
			Should be made wide enough to allow for heavier vehicles.					B					
			Decrease parking spaces					HV					
			If two way chicanes do not have a central divider, vehicles can move in the opposite lane, resulting in less speed reduction.					M			Medium		
			Does not take the pedestrian into account as driver is more concentrated on how to manoeuvre					P					
								PTV					
42 c	Pavement Narrowing[98,95]	Extra road left from the narrowing can provide pedestrian footway, bicycle lanes, parking bays or central islands	Need to be visible at all times.	Low-Medium	>60%	25-40%	5-10yrs	C	Urban	Local	Low	Low	≤2
			Should not impede the movement of the buses in bus route areas.					B					
								HV	Suburban	Collector & minor arterial			
			Central islands are not constructed for pedestrian use					M			Medium	Medium	3 to 4
		Roads must be less than 35mph	Any street furniture placed on an island must be ≥0.5m from edge of kerb					P	Rural	Principal arterial			
		May decrease vehicle speeds						PTV			Medium		≥5

		and encourage safer driving	Might increase if more traffic calming schemes are needed around it						Interurban		-High		
42 d	Speed Cushion[98]	Allow wide vehicles to pass by without disturbing them therefore does not decrease the speed of emergency vehicles. Also decreases noise pollution Two wheelers are not affected by them	If they are less than 2m cars might avoid them. Cannot be used in zigzag areas of pedestrian crossings or areas than pedestrians cross(trip hazard).	Low	40-60%	>60%	5-10yrs	C B HV M P PTV	Suburban Rural Interurban	Collector & minor arterial Principal arterial	Medium -High High	Medium High	≤2 3 to 4 ≥5
42 e	Speed hump- Flat-top[98,124,59,115]	Can be used as a pedestrian crossing. Reduce vehicle noise emissions	Require additional drainage. A max spacing of 150m is recommended but this spacing will increase braking and acceleration. A 60-70m spacing is required for 30km/hr roads All humps require road signs which increase their cost. On average each hump increases travelling time by 6sec	Low-Medium	25-40%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Collector & minor arterial	Medium Medium -High	Low	≤2
42f	Speed hump- 'H' hump[115,98]	Designed so that buses and cars can travel over it with a similar speed Reduce vehicle noise emissions	Might not be as effective for smaller ambulances, fire appliances and minibuses. Drainage gullies are needed to prevent water from ponding. Authorities need to ensure that the side slopes do not cause discomfort to cyclists and motorcyclists All humps require road signs which increase their cost. On average each hump increases travelling time by 6sec	Medium	25-40%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2
42 g	Speed humps- 'S' hump[115,98]	Can be used as a speed cushion scheme where raised junctions or pedestrian crossings are required. Benefits large buses and ambulances and decreases the speed of vehicle Reduce vehicle noise emissions	Might not be as effective for smaller ambulances, fire appliances and minibuses. 100m spacing is acceptable. All humps require road signs which increases their cost. On average each hump increases travelling time by 6sec	Medium	>60%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2
42 h	Speed humps- Sinusoidal[98,115]	More comfortable than others to cyclists Reduce vehicle noise emissions	Causes concern to cyclists when the hump edge meets the road. Might cause discomfort to vehicle occupants. Difficult to construct All humps require road signs which increase their cost. On average each hump increases travelling time by 6sec	Low	>60%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2
42i	Speed humps- Raised junction[98,115]	Safer and easier turning manoeuvres for drivers on minor arms	A max spacing of 150m is recommended but this spacing will increase braking and acceleration. A 60-70m spacing is required for 30km/hr roads Requires additional drainage works All humps require road signs which increases their cost. On average each hump increases travelling time by 6sec	Medium	40-60%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2

42j	Speed humps- Round-top[98,115]	Maximum spacing of 150m When a series of round top is laid there is a dramatic decrease in accidents Provides safe environment for pedestrians to cross	Require additional drainage. A max spacing of 150m is recommended but this spacing will increase braking and acceleration. All humps require road signs which increases their cost. On average each hump increases travelling time by 6sec A 60-70m spacing is required for 30km/hr roads It slows emergency vehicles and buses at the same speeds reduction as vehicles Can cause localised congestion and vibration to nearby buildings	Low-Medium	40-60%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2
42 k	Speed humps-Thump (thermoplastic humps)[98,115]	Drivers prefer it as they can control it at higher speeds	Might cause discomfort to vehicle occupants if they are > 50mm in height. May not be suitable for some types of roads because they do not give the suitable discomfort needed as other humps Under extreme weather condition might flat or crack. All humps require road signs which increases their cost. On average each hump increases travelling time by 6sec Can be crossed at higher speeds than humps or cushions	Low	40-60%	40-60%	5-10yrs	C B HV M P PTV	Urban Suburban	Local Collector & minor arterial	Medium Medium -High	Low	≤2
43	Traffic calming[70]	Reduced crashes. Reduced traffic volumes on local roads. A better environment for pedestrians and cyclists.	Some local traffic problems should be referred to the Police in the first instance, for example racing or speeding. There is often negative public feedback that traffic calming devices inconvenience local drivers, create noise, do not cater for bicycles or hinder emergency and other heavy vehicles. Traffic calming can be costly and takes to implement (requiring community consultation and traffic data collection and analysis). Isolated traffic calming devices can be a traffic hazard.	Medium-High	50%	10-25%	1-5yrs	C B HV M P PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Medium Medium -High High	Low Medium High	≤2 3 to 4 ≥5
Safer vehicles													
44	Daytime Running Lights (DRL)	Low-wattage lights Improves visibility to other vehicles Automatically activated when engine starts and turn off when engine stops/night headlights are switched on Do not dazzle drivers visibility	Increase in fuel consumption and CO_2 emissions by 0.5% but this is expected to decrease when LEDs are used in place of filament lamps	Low	0-10%	0-10%	5-10yrs	C HV M PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
45	New car assessment programme (NCAP)[70]	All cars manufacturers give their vehicles for a NCAP assessment that is trusted by all critics. NCAP is a trusted organisation by road authorities and organisations Set benchmarks higher and reward companies that manufacture safe cars.	Not many people check safety using NCAP organisation criteria when buying a new car	Low	0-10%	>60%	20+yrs	C P	Urban Rural Interurban	Local Collector & minor arterial	Low Medium Medium-High	Low Medium	≤2 3 to 4

		Companies are encouraged to make their cars safer since NCAP allows for comparison Child protection and pedestrian safety are taken into consideration							Suburban	Principal arterial	High	High	≥5
46	Motor vehicle standards[70]	Standards used on motorised vehicles in order to improve both vehicle safety from crashing as well as passenger and pedestrian safety at the time of the crash. Moreover it can assist drivers whilst driving	Some vehicles might not get checked. Poorer people can not afford to have a vehicle with more standards since they cannot afford a good one.	Low		>60%	20+yrs	C HV M PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
47	Safe Bicycle Use[89]	Bicycling is affordable and sustainable road transport facility therefore it should be promoted Requires less money to be spend on bicycle road facilities than infrastructure for vehicles Bicyclists training courses exist Import of recycled bicycles and training of people on how to repair their bicycle Laws on bicyclists (to wear safety clothing, lightning, brakes, wheel attachment, tyre air and cycle route use)	Bicyclists are amongst the vulnerable road users since they use the road with heavies and more dangerous vehicles There are not many skilled bicycle repairers in developing countries and countries that do not use bicycles. Bicycling facilities do not exist in all countries.	Low		>60%	5-10yrs	B	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
48	Safe heavy and public transport vehicle use[28]	Inspections are made on heavy vehicles on whether they are safe to drive More heavy vehicle safety measures are required therefore the vehicle manufacturers can increase the safety of heavy vehicles	Since the mass of the vehicle is greater than other vehicle's, crash impacts are more severe Truck occupants risk themselves when driving at high speeds since it is easy for the driver to lose control of the vehicle Heavy vehicle drivers think that they have more right on the roads than other users since they drive a bigger vehicle	Low		>60%	20+	HV PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
49	Safe motorcycle use[117]	Intelligent transport system (ITS) that includes Anti-lock Braking Systems (ABS), Electronic Stability Control (ESC) and Intelligent Speed Adaptation (ISA) are now being used on motorcycles	Motorcyclists are amongst the vulnerable road users. Motorcycles are not very stable therefore more care needs to be taken by driver, esoecially when drivin at high speeds	Low		>60%	20+	M	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
50	Used car safety ratings[70]	Cars are checked on whether they have all the safety features required for road safety Using the ratings, consumers are armed to encourage dealers and importers to sell safer cars		Low		>60%	20+yrs	C	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
51	Vehicle features and devices[70]	Primary safety features that prevent a vehicle to crash. Anti lock braking system and/or collision warning systems, adjustable mirrors,		Low		>60%	20+yrs	C HV	Urban Rural	Local Collector	Low Medium	Low	≤2 3 to 4

		traction control and electronic stability control								& minor arterial			
		Secondary safety features that reduce the severity of the crash. Airbags, Seatbelts, seatbelt reminders, head locks						PTV	Interurban		Medium-High	Medium	
									Suburban	Principal arterial	High	High	≥5
52	Vehicle road worthiness[70]	Removes vehicles that are old and unsafe from the road	Research has shown that regular vehicle feature checking does not reduce road accidents	Low		>60%	20+	C	Urban	Local	Low	Low	≤2
		A good way of inspecting vehicles especially Public transport and heavy vehicles						HV	Rural	Collector & minor arterial	Medium	Medium	3 to 4
								PTV	Interurban	Principal arterial	Medium-High	High	
									Suburban		High		≥5
Road Users													
53	Addressing alcohol and other drugs[70]	Strict laws such as loss of licence for a period of time, imprisonment, penalty points, and expensive fines are effective in making the drivers not want to drink	Disturbing advertisements is better not to be used as alcoholics do not see themselves as drunk drivers	Low-Medium	>60%	10-25%	1-15yrs	C	Urban	Local	Low	Low	≤2
		Authorities cooperate with bars and pubs to sell non alcoholic beverages	Drivers might change their route if they had more drinks					HV	Rural	Collector & minor arterial			3 to 4
		Drug/drunk driving laws must be strict so that drivers follow them						M	Interurban		Medium	Medium	
		If caught drug driving a record is kept on driving licence for 11 yrs	If police patrols do not exist at places where drunk drivers drive then they are unlikely to get caught					P	Suburban	Principal arterial	Medium-High	High	≥5
		If caught drunk/drug driving car insurance increases						B			High		
		Employees must know whether their staff have past drunk/drug records						PTV					
54	Child safety initiatives[70]	Children up to 135cm of height must wear a seat	If parents do not follow the road safety rules then children are most likely not to either (since parents are usually considered as role models)	Low	10-25%	>60%	1yr/ temporary	C	Urban	Local	Low	Low	≤2
		School travel plans are created						HV	Rural	Collector & minor arterial	Medium	Medium	3 to 4
		Teenagers of more than 14yrs have to pay their own fine when they do not wear their seatbelt						M			Medium-High		
		Fun events for kids						P	Interurban				
		Fun events for children						B		Principal arterial	High	High	≥5
		Training centres exist on child safety and bicycling						PTV	Suburban				
		Advice for child restrains for parents											
55	Education[7 0,34,59]	Education is better to begin at an early stage of 4-5yrs old	Starting education beyond 17 years is unlikely to influence safe attitudes towards driving	Low	>60%	10-25%	1yr/ temporary	C	Urban	Local	Low	Low	≤2
			Lack of the effectiveness of the programmes exists in most of the countries					HV	Rural	Collector & minor arterial			3 to 4
		Educating the public and accompanying this education with enforcement then it becomes very effective						M	Interurban		Medium	Medium	
			The person himself needs to be motivated and make changes in the way he/she drives					P	Suburban	Principal arterial	Medium-High	High	≥5
								B			High		
								PTV					
55 a	Educational	These presentations are usually given by the police	At the end of the day the outcome depends on the people's opinion and	Low	>60%	10-25%	1yr/ temporar	C	Urban	Local	Low	Low	≤2
								HV	Rural	Collector	Medium	Medium	3 to 4

	presentations	They educate childen, teenagers and company members on road safety matters	motivation on road safety matters				y	M P B PTV	Interurban Suburban	& minor arterial Principal arterial	Medium-High High	High	≥5
55 b	Leaflets/ newsletters	Educate each type of road user individually Easy and straight forward way to educate readers Wiritten in orther languages so that tourists can read them	If badly written/ dewsigned they will not catch the attention of the public Not accessible in all the areas (especially for tourists), therefore they need to be allocated to people	Low	>60%	10-25%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
55 c	Neightboourhood meetings	These meetings are carried out so that the neightbourhoods can discuss any problems that occur with road safety. This can be either because a measure is needed, or because a road safety measure implemented is dangerous or unwanted from the neightbourhood It helps police and road authorities to understand if a measure is wanted or if a problem exists	Somepeople might not be in favour of changes around their house and will try and find reasons to remove some measures Police might not give attention to the problem	Low	>60%	10-25%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
55 d	School teacher education	The more educated the teacher the better s/he will give the road safety lecture Children's perception of road safety starts from early years	The teachers are not educated in some countries and as a result a wrong idea about road safety might be given to the children	Low-Medium	>60%	10-25%	25+	P B	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
55 e	Police/road authority education[59]	Enables all the police force to be educated on new road safety matters This leads to an increase of law enforcement effectiveness		Low	>60%	10-25%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
56	Emergency response[70,36]	The better the response the more chance an injured person has to survive	If a GPS does not exist then emergency response might not reach to the place of the accident on time but lie about it. Some countries do not have an accident emergency number There might not be any trained staff to treat the injured people	Low-Medium	Low	>60%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
57	Enforcement[70,59,36]	When combined with education it becomes very effective Various ways of enforcement exist such as speed reduction enforcement by speed cameras, alcohol reduction enforcement by stricter laws	More lenient laws are not as effective since people try to get away with them Must be used with other engineering or police patrol measures so that road authorities can demonstrate to road users that the law is enforced	Low-Medium	>60%	>60%	25+	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5

		etc. These ensure that people must obey the law											
58	Fatigue management[70]	Recommendations to tired drivers	Drivers do not stop to rest when they are tired unless they are very sleepy	Low	10-25%	0-10%	1yr/ temporary	C HV PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
59	Helmet and protective clothing[70]	Protect cyclists and motorists from serious injuries when a crash occurs Helmet wearing must be enforced to both cyclists and bicyclists	Protective clothing is only recommended but not enforced If not correctly enforced then the riders will not follow it Bicyclists and motorcyclists must be educated on the correct helmet to wear	Low	10-25%	40-60%	25+	B M	Urban Suburban Rural Interurban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
60	Licensing[70]	Must be mandatory by law in all countries It makes the drivers to learn the good practice laws needed for a driving test (rewrite)	Some countries do not have a licence test Education for test is not ideal in some countries	Medium	>60%	>60%	25+	C HV M PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
61	Publicity[70, 53]	Educational campaigns have a great effect on drivers behaviour (around 84% for drunk driving campaigns) If they are combined with enforcement then they are a lot more effective	Disturbing advertisements are not as effective because the drivers do not see themselves as drunk or drivers who speed etc. Must be tested on target groups before proceeding Should be realistic, non-judgemental, convincing, non-apologetic, must contain emotion	Medium	40-60%	10-25%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
62	Seatbelts[70]	Seatbelts are now mandatory in all cars that are created Seatbelt wearing is one of the easiest things to be done by the vehicle occupants	Seatbelt wearing is often neglected Police is not always on patrol to check whether all vehicle users wear their seatbelts. Therefore this comes to the drivers' pinion about seatbelts People often think that airbags will save them but they do not know that airbags are only activated when a seatbelt is worn	Low	0-10%	>60%	25+	C HV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5
63	Speed Management[70,117]	If speed programmes are effective then the road users attitude may change. Speed cameras and speed reducing measures can be seen at treatment no. 5	Depends to the road users behaviour and opinion on speeding at the end of the day Usually people tend to speed when they are in a hurry without thinking that this might be dangerous	Low	40-60%	10-25%	1yr/ temporary	C HV M P B PTV	Urban Rural Interurban Suburban	Local Collector & minor arterial Principal arterial	Low Medium Medium-High High	Low Medium High	≤2 3 to 4 ≥5

References are shown as numbers next to each road safety measure. For abbreviations check Table 5.1

APPENDIX B

DETAILED DATA NEEDS OF THE MODEL

Data Needs	Unit	Department Responsible	What to do in case I do not find data?	Communicated about it? (Y/N)
A. Road Safety Model				
Road safety measures				
Already used in Cy	Names	MCW	Use measures from literature	Y
Cost	€	MCW	Use UK costs	Y
Effective life	years	MCW	Use UK effective life	Y
Annual maintenance cost	€	MCW	Use UK ones (but weather is different)	Y
Operating costs	€	MCW	Use UK costs	Y
Disadvantages	Text	Literature	Do not put	Y
Discount rate used	%	MCW	Use EU one	Y
Accident value (all types)	€	MCW	Use UK ones	Y
Types of Crashes that occur				
Intersections	No.	Police Accident Data	Adapt them	Y
Head-on	No.	Police Accident Data	Adapt them	Y
Manoeuvring	No.	Police Accident Data	Adapt them	Y
Rear-end	No.	Police Accident Data	Adapt them	Y
Run off-road	No.	Police Accident Data	Adapt them	Y
Vehicle-Cyclist	No.	Police Accident Data	Adapt them	Y
Vehicle-Pedestrian	No.	Police Accident Data	Adapt them	Y
Crash information				
No of fatalities	No.	Police Crash Data		Y
No of serious injuries	No.	Police Crash Data		Y
No of minor injuries	No.	Police Crash Data		Y
No of damage only	No.	Police Crash Data		Y
Cost of crashes	Price €	MCW	Use UK prices	N
Cost of casualties	Price €	MCW	Use UK prices	Y
Initial cost of treatment	Price €	MCW	Lit. review	Y
Maintenance and operating cost	Price €	MCW	Lit. review	N
Crash reduction effectiveness	%	MCW	Lit. review	N-most
Casualty reduction effectiveness	%	MCW	Lit. review	N- most
Treatment life	years	MCW	Lit. review	N
Motor Vehicle Standards	Text	Interview Police/ Traffic Safety Dept	EU standards	N
Safer People				
Alcohol measures	Text	Interview Police	Collected from Police	Y
Child Safety	Text	Interview Police	Collected from Police	Y
Education	Text	Interview	Collected from Police	Y

		Police		
Emergency response	Time	Interview Police	Collected from Police	Y
Driver fatigue management	Text	Interview Police	Collected from Police	Y
Helmet and protective clothing	Text	Interview Police	Collected from Police	Y
Licensing	Text	Interview Police/	Collected from Police	Y
Publicity	Text	Interview Police	Collected from Police	Y
Area characteristics				
Area type	Text	Road inspection	Ministry of communications and works (MCW)	Y
Functional class of roadway	Text	Road inspection	MCW	Y
Vehicle volume, AADT	Veh/day	Road inspection	MCW	N
Speed limit	km/hr	Road inspection	MCW	Y
Number of lanes		Road inspection	MCW	Y
Length	m		MCW	Y
Width	m		MCW	Y
B. Risk Mapping				
Mapping and Asset Mngmt				
Road map				Y
Historical traffic data				
Crash Data (last 3 years)				
Fatal	Number	Police	Collected	Y
Serious	Number	Police	Collected	Y
Years of data	Number	Police	Collected	Y
Length of the link	m	MCW	Collected	Y
Severity outcome	KSI	Police	Collected	Y
C. Performance Tracking				
Consulting w/ Police				
Issues affecting performance	Text	Police	Collected	Y
Measures implemented	Text	Police	Collected	Y
Effective/Ineffective measures	Text	Police	Collected	Y
Consulting w/ MCW				
Issues affecting performance	Text	Mr. Morfakis	Collected	Y
Measures implemented	Text	Mr. Morfakis	Collected	Y
Effective/Ineffective measures	Text	Mr. Morfakis	Collected	Y
D. By road inspection				
Junction				My Responsibility
Junction type	Text	Maps/road inspection		Y
Junction frequency (AADT)	Veh/day	Maps/road inspection		Y
Relative impact speed	km/hr	Police	Do not use	Y

Roadside protection				
Aggressive obstacles	Text	Road inspection	Collected	Y
Safety zone width	m	Road inspection	Collected	Y
Safety barriers	Y/N	Road inspection	Collected	Y
Cuts embankments	Text	Road inspection	Collected	Y
Median Treatment				
Central reserve width	m	Road inspection	Collected	Y
Safety barriers	Y/N	Road inspection	Collected	Y
Rumble strips	Y/N	Road inspection	Collected	Y
Hatching	Y/N	Road Inspection	Collected	Y

APPENDIX C

QUESTIONNAIRE TO THE MINISTRY OF COMMUNICATIONS AND WORKS

Questionnaire- Ministry of communications and works

General questions about crashes in Cyprus

1. 2010 was the year with the least road crashes, 60, in the past 35 years. What do you think is the main reason for this decrease?

   a. Public awareness?

   b. Better roads?

   c. Better vehicles?

   d. European Union entry?

   Το 2010 Τα δυστυχήματα στην Κύπρο έχουν μειωθεί από 102 το 2005 σε 60 το 2010. Ποια κατά την γνώμη σας είναι η κύρια αιτία για αυτή την μείωσή?

   Α. Ενημέρωση του πολίτη (Αστυνομία)

   Β. Καλύτεροι δρόμοι

   Γ. Καλύτερα αυτοκίνητα

   Δ. Η κατάταξη της χώρας στην ΕυρωπαΪκή Ένωση

   The evaluation of the decrease in the amount of crashes that have occurred has not taken place yet. We are the currently waiting the extraction of data from the consultants to come with the new Strategic Plan. But if you are asking for my opinion I am saying that all of the above measures must have helped.

2. According to WHO, a 95% of the crashes occur from human error. Is there any data indicating how much of a, b, and c contribute to these crashes that occur in Cyprus?

   In case you don't know the exact amount you can answer according to your experience and opinion.

   (Put an answer from 1 to 10 with 10 being the greatest)

   a. Totally human error………….. 1 2 3 4 5 6 7 8 9 10

   b. Vehicle failure……..…………….. 1 2 3 4 5 6 7 8 9 10

   c. Road failure……………………….. 1 2 3 4 5 6 7 8 9 10

   Σύμφωνα με την WHO. 95% των δυστυχημάτων συμβαίνουν λόγω ανθρώπινου λάθους. Υπάρχουν δεδομένα που να όσο από το α, β και γ συμβάλλουν στα δυστυχήματα που συμβαίνουν τη Κύπρο? Εάν δεν γνωρίζετε την ακριβείς απάντηση τότε απαντήστε ανάλογα με την πείρα και την γνώμη σας.

α. Εξ ολοκλήρου ανθρώπινο λάθος...1 2 3 4 5 6 7 8 9 10

β. Βλάβη αυτοκινήτου.......................1 2 3 4 5 6 7 8 9 10

γ. Βλάβη δρόμου................................1 2 3 4 5 6 7 8 9 10

☐Ανάλυση στοιχείων / Data analysis ☐Εμπειρία / Experience

Yes the approximately it is the same for Cyprus too. I do not know whether the Police have the data or even if they are measuring the amount. MCD department takes the data from the police but does not measure them.

3. According to crash data, in which areas do most crashes occur?

   a. Urban

   b. Interurban

   c. Suburban

   d. Rural

   Σύμφωνα με τα δεδομένα, σε ποιους τύπους δρόμων συμβαίνουν τα περισσότερα δυστυχήματα?

   α. Αστικούς

   β. Υπεραστικούς- μεταξύ πόλεων

   γ. Προαστιακούς- (μικροαστικούς)

   δ. Αγροτικούς

PIN Flash 18 demonstrates the amount of crashes, in percentage, that occurred in urban areas, rural areas and motorways around EU. The graph shows that 56% of crashes occur in urban areas, 32% in Rural and 12% in motorways. According to EU average, the crashes that occur in urban areas and in motorways in Cyprus are higher

4. What is the cost of a crash (in Euros)? Fatal, serious crash, minor crash, damage only?

   Πόσο κοστίζουν τα δυστυχήματα?

   α. Θανατηφόρα

   β. Σοβαρά

γ. Ελαφρά

δ. Υλικές Ζημιές

The only costs that exist are casualty costs

5. What is the cost of casualties (in Euros)?

   Ποιο είναι το κόστος τραυματισμού?

   α. Θανατηφόρου:

   β. Σοβαρού:

   γ. Ελαφρύ:

6. What us the discount rate used for projects in Cyprus

   Ποιό είναι το προεξοφλητικό επιτόκιο που χρησιμοποιείτε για τα έργα που γίνονται στην Κύπρο?

   I do not know

Questions about data collection

7. How are crash data analysed from your department after they are collected from the Police?

   Πως αναλύονται τα δυστυχήματα από το τμήμα σας μετά που μαζεύονται από την Αστυνομία?

   The Police record the crashes on a map and the maps are given to the people who deal with the black spots. These people look whether more than five crashes have occurred (fatal, serious and minor) in an area. Then they examine the schematic diagrams of the crash statistics forms and visit the place of the crashes to inspect it before applying any measures. Police people are also there

8. Are the crashes recorded on a map to identify the most risky areas?

   8a. If not would you be interested in that? (Would you think it would help you to 'notice' if something is wrong with a road that you might not have realised?)

   Τα δυστυχήματα καταγράφονται σε χάρτη ούτως ώστε να εντοπιστούν οι περιοχές που είναι πιο επικίνδυνές για τους χρήστες του δρόμου? γιακαθε χρονο ξεχωριστα?

(Νομίζετε ότι θα βοηθούσε να 'προσέξετε' εάν υπάρχει κάτι λάθος με τον δρόμο το οποίο δεν θα προσέχατε διαφορετικά?

Yes maps of the cities and provinces exist. Police records them

9. How is the problem in a hazardous area identified? For example does it depend mostly on the types of crashes that occurred?

   Για να εντοπίσετε το προβλημα στην κάθε περιοχή? Τι δυστηχήματα χρησημοποιείτε? Θανατηφορα, σοβαρα, ελεφρα, υλικές ζημιές.

   Για παράδειγμα δίνετε περισσότερη έμφαση στου τύπους δυστυχημάτων που συμβαίνουν?

   Yes, all the types of crashes are used.

10. After problem identification and before implementing any measures in a hazardous area, is there a site visit taking place?

    Μετά τη εντόπιση του προβλήματος σε μια περιοχή, πριν να παρθουν οποιαδήποτε μέτρα γίνετε έλεγχος ασφαλείας στην περιοχή?

    Yes a site visit takes place where the Black spot staff inspects the roads and take pictures

    A committee exists with people from the Department of public works, the Police and the town-planning department. When the roads are in municipality areas, then the municipality is responsible for the road safety problems that arise and whether they want to fix them.

Inspections/ Επιθεωρήσεις

11. Are the inspections carried out with a specially equipped vehicle?

    Οι επιθεωρήσεις γίνονται με ειδικό αυτοκίνητο?

    Yes they inspect the roads outside urban areas and motorways and 2 lane roads

12. Are video cameras used during inspections?

    Χρησιμοποιούντε βιντεοκάμερες?

Εάν χρησιμοποιείτε βιντεοκάμερα στις επιθεωρήσεις τότε πως την αναλύωνται τα αποτελέσματα?

No only digital photo cameras

13. Is there a list containing all the road safety measures that exist together with the prices, to assist the engineer in deciding gif a measure is the right one?
    Ποιά είναι τα μετρα οδικής ασφαλειας που χρησημοποιούντε στην Κύπρο? Υπάρχει μία λίστα με τα μέτρα οδικής ασφαλείας και τιμολόγιο στο οποίο να αποφασίζει ο μηχανικός εάν ένα μέτρο είναι κατάλληλο?
    Lists were provided with the measures used between 2007-2010 together with the prices of some of the measures.

14. Έχετε δεδομένα που να δίχνουν τί μέτρα οδικής ασφαλείας εχουν υλοποιηθεί παλιά στον δρόμο Στασίνου-Σαλαμίνος?
    Not here but the department of public works has the information

15. After the implementation of a new road safety measure do you measure its effectiveness? If yes, how is it measured?
    Μετριέται η αποτελεσμάτικότητα του κάθε μέτρου ασφαλείας που υλοποιήθηκε?
    Σχετικά με τον αριθμό δυστυχημάτων που μπορούν να μειώσουν
    Σχετικά με την μείωση τραυματισμών?

    For black spots the effectiveness is measured according to the amount of black spots that occurred in the next year. Like for 2009 the black spots were 47 but in 2010 the black spots became 16. The effectiveness is not measured in numbers but in the decrease of the black spots. If crashes have not occurred on the same black spot again, then the measures taken are considered to be effective. But for campaigns that are held the effectiveness is not measured as it is very difficult to measure it

16. Do you carry out economic analysis?
    FYRR?
    NPV?
    NPV/PVC?
    BCR?

IRR?
No we do not and we would be very interested in that. Not enough staff exists to carry out this analysis.

General questions

17. From the information you have provided me with in September 2010, are the weaknesses that you stated still the same?
Από τις πληροφορείες που μου προμηθεύσατε τον Σεμπτέμβρη, ισχύουν ακόμη οι δυσκολίες που υπήρχαν?
Yes more or less

18. A lot of crashes have occurred that involve motorcycles. Would you consider creating motorcycle lanes?
Γεννικά απο δεδομένα προηγουμένων χρόνων έχουν συμβεί αρκετά δυστυχήματα με μοτοσυκκλεττιστες. Σκέφτεστε να κατασκευάσετε μοτοσικλετίστριες λωρίδες?
No we haven't thought about that

APPENDIX D

QUESTIONNAIRE TO THE POLICE

Questionnaire to Mr. Menelaos Menelaou, head of the Police's statistics department, on the 28th of December 2010

3. Crashes in Cyprus have decreased from 102 in 2005 to 59 (15 of December 2010). What is the main reason for this 42% decrease? (If you are not sure answer according to your opinion)
   a. Public awareness?
   b. Better roads?
   c. Better vehicles?
   d. European Union entry?
   Τα δυστυχήματα στην Κύπρο έχουν μειωθεί από 102 το 2005 σε 59 (15 Δεκεμβρίου 2010). Ποια κατά την γνώμη σας είναι η κύρια αιτία για αυτή την μείωσή?
   Α. Ενημέρωση του πολίτη
   Β. Καλύτεροι δρόμοι
   Γ. Καλύτερα αυτοκίνητα
   Δ. Η κατάταξη της χώρας στην Ευρωπαϊκή Ένωσή

   I am not sure, but in my opinion all of the above has its own role in decreasing the amount of accidents. For example, Police is giving lectures to schools, army bases and with the current enforcement of laws and by informing the public of the dangers such as drinking and driving, seatbelt use etc., the public is getting more aware and their mentality is becoming more European. Moreover, the roads in Cyprus are not very old and they are always maintained and improved. Most of the Cypriots have new cars nowadays. Finally, by having to present results to the EU we try to be more effective.

For the crash data collected:

4. What data is police collecting after a serious or fatal crash?
   a. Place of KSI?
   b. Type of vehicle involved
   c. Type of crash e.g.. Side collision, head-on etc.
   d. Traffic calming measures next to the accident
   e. Lighting conditions
   f. Weather conditions

Τι στοιχεία συλλέγει η Αστυνομία μετά από ένα σοβαρό ή θανατηφόρο δυστύχημα?

   Α. Τοποθεσία σοβαρού/θανατηφόρου δυστυχήματος
   Β. Τύπος οχήματος (αυτοκίνητο, φορτηγό, μοτοσυκλέτα κ.α.)
   Γ. Τύπος δυστυχήματος: (εμπρόσθια σύγκρουση, σε διασταύρωση κ.α.)
   Δ. Μέτρα ασφαλείας γύρω από το ατύχημα
   Ε. Συνθήκες φωτισμού στον δρόμο
   Ζ. Καιρικές συνθήκες
   Everything is on the list. (Look at the accident paper)

5. How does Police deal with the data collected?
   Πώς χρησιμοποιεί η Αστυνομία τα στοιχεία που συλλέγονται?
   When a crash occurs, for example the main cause of the accident is road failure, then the police is informing the qualified people, working for the road mainenance department, to

take the required measures needed for the road to become safe eg. Improve line markings, provide lighting.

6. According to WHO, 95% of the crashes occur from human error. How much of a, b, and c contribute to these crashes? In case you don't know the exact amount you can answer according to your experience and opinion.
(Put an answer from 1 to 10 with 10 being the most)

a. Totally human error……………... 1 2 3 4 5 6 7 8 9 10
b. Vehicle failure………………….. 1 2 3 4 5 6 7 8 9 10
c. Road failure……………..……. 1 2 3 4 5 6 7 8 9 10
Σύμφωνα με την WHO, 95% των δυστυχημάτων συμβαίνει από ανθρώπινο λάθος. Πόσο από τα α, β και γ συμβάλλουν σε αυτά? Εάν δεν γνωρίζεται το ακριβές ποσόν απαντήστε με γνώμονα την πείρα και την γνώμη σας.
(Βάλτε την απάντηση σας από το 1 έως το 10, με το 10 να σημαίνει περισσότερο)
α. Εξ ολοκλήρου ανθρώπινο λάθος…….. 1 2 3 4 5 6 7 8 9 10
β. Βλάβη αυτοκινήτου………………... 1 2 3 4 5 6 7 8 9 10
γ. Βλάβη δρόμου……………………….1 2 3 4 5 6 7 8 9 10
☐ Ανάλυση στοιχείων / Data analysis ☑ Εμπειρία / Experience
According to my experience 99% of the accidents occur because of human error. There is rarely the case where the car has broken down or the road has failed. Even if the road or the car have played a role in the accident, still the driver must have not been driving correctly.

7. Does Police collect vehicle and road failure information?
Η αστυνομία συλλέγει στοιχεία αν υπήρξε οποιαδήποτε βλάβη σε αυτοκίνητο ή στον δρόμο τον οποίο συνέβαλε στο ατύχημα?

Yes

8. What measures are taken (from Police/Road authorities) if vehicle failure is the main cause of accident?
Τι μέτρα παίρνει η Αστυνομία όταν η βλάβη αυτοκινήτου είναι το κύριο αίτιο σε ένα δυστύχημα?
When Police does road patrols, if they notice something wrong with a car (e.g. tyres, broken wondow), they inform the driver.

9. What measures are taken (from Police/Road authorities) if road failure occurs?
Τι μέτρα παίρνει η αστυνομία εάν υπάρχει βλάβη στον δρόμο που να συνέβαλε σε ένα δυστύχημα?
Inform the road maintenance department to take actions

10. When a crash is NOT because of a human error how does the police deal with that?
Όταν το αίτιο ενός δυστυχήματος δεν είναι ο ανθρώπινος παράγοντας, ποια είναι η αντίδραση της αστυνομίας;
Inform the authorities responsible to take action

11. In which city do most of the crashes occur? (Give percentage)

Σε ποια πόλη συμβαίνουν τα περισσότερα δυστυχήματα; (Ποσωστό)
Nicosia

12. Which types of roads do most crashes occur?
Σε τι τύπους δρόμων συμβαίνουν τα περισσότερα δυστυχήματα;
In all types of roads. Accidents are spread in all parts of the country almost equally because it is a small country. When more than 3 accidents in 3 years occur in part of a road, then this part is considered to have a problem.
13. Where do most crashes occur?
a. Tourist areas
b. Inside cities
c. Close to the cities
d. Inside villages
e. Close to the villages

11a. What is the police doing about that? Ask about police patrols outside the city.
Που συμβαίνουν τα περισσότερα δυστυχήματα?
Α. Σε τουριστικές περιοχές
Β. Μέσα στις πόλεις
Γ. Κοντά στις πόλεις
Δ. Μέσα στα χωριά
Ε. Κοντά στα χωριά
Τι κάνει η Αστύνομια για αυτό? (Σχετικά με του ελέγχους στους δρόμους - περιπολίες)
Mostly B but accodets are spread. The police has road patrols especialy in the nights in all parts of the area. Moreover, we give lectures, advertise the dangers, inform the public.

14. Does Police record crash on a map to identify the most risky areas?

12a. If not will you be interested in that?
Καταγράφει η αστυνομία τα δυστυχήματα που συνέβησαν σε χάρτη ούτως ώστε να βρεθούν οι πιο επικίνδυνες περιοχές?
Θα σας ενδιέφερε κάτι τέτοιο?
Police has a map that records exact places where accidents occur, not the amount of accidents that occur in those places. They do not record the types of accidents or what accidents occur.

15. How does the police decide to set road patrols?
Πώς αποφασίζει η Αστυνομία να διαλέξει τις περιοχές που θα κάνει περοπολία?
According to places where clubs, alcohol, and drugs are and the different roads that lead people to them.

Alcohol & other drugs

16. In the newspapers it has been stated that most of the crashes that occurred in 2010 were due to drunk driving. Does data support this statement? What measures is Police currently taking for this?

14a. which measure is/was the most effective?

14b. Which is/was not?
Διάβασα στις εφημερίδες ότι το 2010 τα περισσότερα δυστυχήματα συνέβησαν λόγω αλκόλ. Τα στοιχεία το υποστΗρίζουν αυτό? Τι μέτρα παίρνει η αστυνομία?
Ποιο/α από τα μέτρα ήταν/είναι τα πιο αποτελεσματικά?
Ποιο είναι/ήταν το λιγότερο αποτελεσματικό?

Yes it does. In most years most of the accidents occur due to alcohol. In previous years the problem of alcohol might not have been considered because they did not use to examine people/bodies whether they have/had alcohol in their bodies.

a. The most effective measure is the police patrols on Fridays, Saturdays and Sundays.
b. Cannot think of measure that was not effective at all. Most of the measures had a positive effect even if that was small.

17. Which measures is the government thinking of implementing?
Τι μέτρα σκέφτεται να πάρει η Αστυνομία?
New Alco-test measures that will have zero alcohol limits to taxi and professional drivers

18. If a person's license has been confiscated due to alcohol how long do they need to get their license back? Do they have to follow any lectures? Alco locks to their cars?
Εάν η άδεια οδήγησης κάποιου ατόμου κατασχέθηκε από την αστυνομία, πόσος καιρός περνά πριν να την πάρουν πίσω? Πρέπει να παρακολουθήσουν οποιαδήποτε μαθήματα? Alco locks to their cars?
There are lectures that are given to people that have trespassed the law, but these are not compulsory and they are not specific for drunk drivers. They are addressed to all road traffic law trespassers because of the small numbers of people. But if they are followed, then the trespassers will have some penalty points taken off their license.

19. In some countries, there is an Alco-Lock law for heavy vehicles trucks and public transport vehicles, including taxis. Do we have this in Cyprus?
17a. If not, are you thinking of implementing it?
Σε μερικές χώρες υπάρχουν νόμοι για συστήματα Alco Lock σε φορτηγά εταιριών και ταξί? Υπάρχει αυτός ο νόμος στην Κύπρο? Αν όχι θα υπάρξει?
Yes we are thinking of implementing it, but we are waiting for results and effectiveness of this system, from other countries that have already implemented it, before implementing it in Cyprus.

Child Safety

20. I have read in the annual report of the government that a private company has been hired to educate children on child safety. Is that correct?
Στην ετήσια έκθεση της κυβέρνησης διάβασα πως μια ιδιωτική εταιρία προσλήφθηκε για να να διδάξει τα παιδιά θέματα για την οδική ασφάλεια. Είναι αλήθεια αυτό?
I do not know about this private company, but apart from Police, I know that Mavrikios foundation, Road Safety Consultation with consultant Andreas Papa from CYTA and a team of disabled people are giving lectures.
From the Police's part we organise lectures at schools, universities during events etc. Every police office in each region gives lectures to the schools and places around it. There are around 200000 lectures. More over, when companies want to be given lectures we are more than happy to give them.

21. How are parents of kids educated? Will it be a good idea to publish a leaflet to each junior school and preschool for parents?

Πώς διδάσκονται οι γονείς παιδιών? Θα ήταν καλή ιδέα να δημοσιευόταν ένα έντυπο για τους γονείς στα δημοτικά και προ-δημοτικά?
There are already educational leaflets that are given to children so that they give them to their parents.

22. School traffic wardens. Do they still exist?
Υπάρχουν ακόμα οι τροχονόμοι?
Yes they do exist but the municipalities, not the Police, employ them.
23. Child safety: In cars
Υπάρχουν μέτρα για την ασφάλεια των παιδιών στα αυτοκίνητα?
Seat belts: The children should be seated right in the car when wearing their seatbelt. According to the age of the children; it should be seated on a child's seat. When a child is not wearing its seatbelt then the parent is fined, up to 16 years old. But after that age, the child is given the fine.
24. Child safety: on mopeds/motorcycles
Τι μέτρα υπάρχουν για την ασφάλεια των παιδιών στις μοτοσυκλέτες/μοτοποδήλατα?
A law exists for the child not to be seated at the front of the moped/ motorcycle as it would be threw at the front if an accident occurs. But there is not age limit of a child to be carried on the motorcycle. There is no law. Drivers that have a learner's licence cannot carry other people.

Fatigue management

25. What measures are taken from the Police for Fatigue Management?
Υπάρχουν μέτρα για την κούραση των οδηγών?
Don't drive when you are tired. Stop at the side of the road and rest for a while. But, nothing more than that.

26. Is the effectiveness recorder?
Εάν υπάρχουν παρακολοθείται η αποτελεσμάτικότητά τους?
For alcohol, blood analysis on injured people has started taking place recently, therefore this is the reason why there are police patrols.

Emergency Response

27. Does the Police record the time needed for a Police car to go to the place of the crash from the time the call was made to the Police?
Καταγράφει η αστυνομία την ώρα που χρειάζέται για το κάθε περιπολικό να πάει στον τόπο δυστυχήματος από την ώρα που έρχεται το τηλεφώνημα στην Αστυνομία?
Yes. The time can be seen on the form. The policeman fills the form
28. Does Police record the time taken for an Ambulance to reach the place of he crash?
Καταγράφει η αστυνομία την ώρα που χρειάζεται για το ασθενοφόρο να πάει στον τόπο του δυστυχήματος?
Yes. The time can be seen on the form. The policeman fills the form
29. Is the emergency response satisfactory?
Είναι ικανοποιητική η χρονική αντίδραση αστυνομίας όταν συμβαίνει ένα δυστύχημα?
As you can see on the paper the policeman fills the form but he/she might not record the exact time because it will look negative on them. Therefore, I cannot say with certainty if the times are satisfactory.

Education

30. What lectures are currently carried out apart from lectures at schools and the army?

Εκτός από τις διαλέξεις που γίνονται στα σχολεία και στους στρατιώτες τι άλλες διαλέξεις γίνονται?
See q. 19

31. How about any lectures for the people in companies?
Γίνονται διαλέξεις σε ανθρώπους εταιριών?
See q. 19

32. What types of lectures are carried out for the people who have trespassed the road traffic law?
Τι διαλέξεις γίνονται στους ανθρώπους που έχουν κάνει παραβάσεις?
There is only one general lecture.
33. Is Police department getting educated when new measures and laws are enforced?
Γίνονται μαθήματα στους αστυνομικούς όταν επιβάλλονται καινούριοι νόμοι και μέτρα ασφαλείας?
Yes

Helmet and protective clothing

34. Are there laws for protective clothing required from the professional motorcycle drivers ?
Υπάρχουν νόμοι που επιβάλλουν τους επαγγελματίες μοτοσυκλετιστές να φορούν προστατευτικά ρούχα?
For motorists: There are no laws that require them to wear clothing. Just helmet. But there are advices given to them.

Licensing

35. Are the licenses of the driving school's teachers renewed? Do they have to retake the tests every year?
Ανανεώνονται οι άδειες αυτοκινήτου των δασκάλων αυτοκινήτου? Κάνουν εξετάσεις κάθε ένα χρονικό διάστημα?
I do not know how this works. The department of road transport has the most appropriate people to answer this question

Publicity

36. I have read that every month there a different campaign is taking place. Does the effectiveness of each campaign measured?
Κάθε μήνα υπάρχει και καινούρια καμπάνια που παίρνει η αστυνομία. Μετριέται η αποτελεσματικότητα της κάθε καμπάνιας?
Yes the effectiveness is measured annually. Every month there is a new 15day campaign that takes place by the police. This campaign might have to do with seatbelts, mobile phones etc. and it is different every month.
In addition to these campaigns, there are some European campaigns that are taking place and we follow them (team spot). Recently there has been one campaign on heavy vehicle checks.

37. Which types of campaigns are the most effective?
Ποιοι τύποι καμπάνιας είναι οι πιο αποτελεσματικές?
Friday Saturday and Sunday patrols in the roads.
38. Which campaigns were not effective?

Ποιές καμπάνιες δεν ήταν αποτελεσματικές?
Cannot think about anything.

39. How much does it cost the government for a campaign?
Πόσο κοστίζει στην αστυνομία για μιά καμπάνια?
It is too expensive to pay for an advertisement. But there is also some funding given from the EU to support these campaigns.

Enforcement

40. Are there any stricter or new measures taking place?
Υπάρχουν αυστηρά μέτρα που λαμβάνουν μέρος?
Zero alcohol limit for proffessional drivers

Old cars

41. Do the checks of old cars meet EU protocols? Is Cyprus following them?
Οι έλεγχοι που υπάρχουν στα παλιά αυτοκίνητα ακολουθούν τις Ευρωπαϊκές προδιαγραφές?
They are checked whether they have passed the MOT test. And advises are given in case a problem is observed on a car.

Used cars

42. Are there any checks on companies that sell used cars?
Υπάρχουν έλεγχοι στις εταιρίες που πουλούν μεταχειρισμένα αυτοκίνητα?
Same as old cars
42. Which is the bigghest problem that Police has to deal with at the moment?
Ποιο είναι το μεγαλύτερο πρόβλημα που αντιμετωπίζει η Αστυνομία αυτή την χρονική περίοδο?
Alcohol

APPENDIX E

CRASH STATISTICS FORMS

E.1. CYPRUS CRASH STATISTICS FORM

E.2. UK's STATS19 FORM

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ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΕΠ. ΜΗΤΡΩΟ ΔΥΣΤ. ΑΡ.

ΑΣΤ. ΔΙΕΥΘΥΝΣΗ ΑΡ. ΑΣΤ. ΣΤΑΘΜΟΣ ΑΡ.

ΗΜΕΡΟΜΗΝΙΑ ΔΥΣΤ. (ΗΜ / ΜΗΝ. / ΕΤΟΣ)	ΗΜΕΡΑ	ΩΡΑ (ΩΡΕΣ / ΛΕΠΤΑ)	ΑΡΙΘΜΟΣ ΟΧΗΜΑΤΩΝ	ΑΡΙΘΜΟΣ ΤΡΑΥΜ	ΑΝΤΑΛΛΑΓΗΣΑΝ ΟΝΟΜ./ΔΙΕΥΘΥΝΣ	Η ΑΣΤ. ΕΠΙΣΚΕΦΘΗΚΕ ΤΗ ΣΚΗΝΗ	ΕΓΚΑΤΕΛ. ΣΚΗΝΗ	ΕΛΗΦΘΗΣΑΝ ΦΩΤΟΓΡ	ΚΤΥΠΩ/ΦΕΥΓΩ	ΣΤΑΘΜ. ΜΗΤΡ. ΔΥΣΤ. ΑΡ.
					ΝΑΙ=1 ΟΧΙ=2	ΝΑΙ=1 ΟΧΙ=2	ΝΑΙ=1 ΟΧΙ=2	ΝΑΙ=1 ΟΧΙ=2	ΝΑΙ=1 ΟΧΙ=2	37–38

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ΑΠΟΣΤΑΣΗ ΚΑΤΑ ΜΗΚΟΣ ΤΟΥ ΔΡΟΜΟΥ Χ.Λ.Μ. ΜΕΤΡΑ 55–56

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ΑΝΑΤΟΛΙΚΑ ΒΟΡΕΙΑ ΠΛΑΤΟΣ ΔΡΟΜΟΥ (ΧΧ. Χ ΜΕΤΡΑ) ΔΙΑΓΡΑΜΜΑ ΚΙΝΗΣΗΣ ΟΔΗΜΑΤΩΝ & ΠΕΖΩΝ (ΙΔΕ ΚΑΤΑΛΟΓΟ)

ΣΗΜΕΙΟ Α ΣΗΜΕΙΟ Β ΓΙΑ ΔΡΟΜΟΥΣ ΔΙΠΛΗΣ ΠΟΡΕΙΑΣ ΜΕ ΚΑΤΕΥΘΥΝΣΗ ΠΡΟΣ: ΠΛΑΤΟΣ ΠΑΓΚΕΤΤΟΥ / ΠΕΖΟΔΡΟΜΙΟΥ (ΜΕΣΟΣ ΟΡΟΣ ΣΤΙΣ ΔΥΟ ΠΛΕΥΡΕΣ ΧΧ. Χ. ΜΕΤΡΑ) 77–78

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	ΜΑΡΚΑ (ΙΔΕ ΚΑΤΑΛΟΓΟ) ΜΟΝΤΕΛΟ ΕΤΟΣ ΚΑΤΑΣΚΕΥΗΣ	ΜΑΡΚΑ (ΙΔΕ ΚΑΤΑΛΟΓΟ) ΜΟΝΤΕΛΟ ΕΤΟΣ ΚΑΤΑΣΚΕΥΗΣ
	ΙΠΠΟΔΥΝΑΜΗ (CC) ΑΡ. ΕΓΓΡΑΦΗΣ	ΙΠΠΟΔΥΝΑΜΗ (CC) ΑΡ. ΕΓΓΡΑΦΗΣ
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ΣΧΕΔΙΑΓΡΑΜΜΑ ΔΥΣΤΥΧΗΜΑΤΟΣ (ΔΕΙΞΕΤΕ ΤΟ ΒΟΡΡΑ)

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ΗΜΕΡΟΜΗΝΙΑ

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

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(** Διευκρινείστε στο χώρο «Περιγραφή Δυστυχήματος»)

ΠΛΗΡΟΦΟΡΙΕΣ ΓΙΑ ΤΟ ΔΥΣΤΥΧΗΜΑ

ΚΑΤΗΓΟΡΙΑ ΔΥΣΤΥΧΗΜΑΤΟΣ (1)
1. Θανατηφόρο
2. Σοβαρών τραυματισμών
3. Ελαφρών τραυματισμών
4. Υλικών ζημιών

ΕΝΕΡΓΕΙΑ ΠΕΖΟΥ (39–40)
01. Διασταύρωνε από δεξιά καλυπτόμενος από σταματημένο όχημα.
02. Διασταύρωνε από δεξιά μη καλυπτόμενος από σταματημένο όχημα.
03. Διασταύρωνε από δεξιά καλυπτόμενος από κινούμενο όχημα.
04. Διασταύρωνε σε διάβαση πεζών.
05. Βάδιζε στο δρόμο – Με πρόσωπο στην Τροχαία–Χωρίς πεζοδρόμιο.
06. Βάδιζε στο δρόμο – Με πρόσωπο στην Τροχαία - Με πεζοδρόμιο.
07. Βάδιζε στο δρόμο – Με πλάτη στην Τροχαία – Χωρίς πεζοδρόμιο.
08. Βάδιζε στο δρόμο – Με πλάτη στην Τροχαία – Με πεζοδρόμιο.
09. Στεκόταν ή έπαιζε μέσα στο δρόμο.
10. Εκτός δρόμου – Πεζοδρόμιο, Νησίδα κλπ.
11. Άλλη ενέργεια μέσα στο δρόμο**.
12. Διασταύρωνε από αριστερά καλυπτόμενος από σταματημένο όχημα.
13. Διασταύρωνε από αριστερά μη καλυπτόμενος από σταματημένο όχημα.
14. Διασταύρωνε από αριστερά καλυπτόμενος από κινούμενο όχημα.

ΜΕΣΑ ΕΛΕΓΧΟΥ ΤΡΟΧΑΙΑΣ (57)
1. Κανένα
2. Αστυνομικός/Τροχονόμος
3. Σήμα ΣΤΟΠ
4. Σήμα προτεραιότητας
5. Κυκλικός κόμβος.
6. Φώτα τροχαίας
7. Φώτα τροχαίας Αστυν./τροχον.
8. Φώτα τροχαίας / αναλάμπον κίτρινο
9. Φώτα τροχαίας. Εκτός λειτουργίας

ΤΕΧΝΙΚΑ ΜΕΣΑ ΔΙΑΣΤΑΥΡΩΣΗΣ ΠΕΖΩΝ (90)
1. Κανένα
2. ΖΕΠΡΑ
3. ΓΡΗΓΟΡΗΣ/ΣΤΑΜΑΤΗΣ
4. ΓΡΗΓΟΡΗΣ/ΣΤΑΜΑΤΗΣ με διακόπτη
5. ΠΕΛΙΚΑΝ
6. ΑΣΤΥΝΟΜΙΚΟΣ / ΤΡΟΧΟΝΟΜΟΣ (Όχι ΔΙΑΒΑΣΗ)
7. Άλλα**

ΣΥΝΘΗΚΕΣ ΦΩΤΙΣΜΟΥ (91)
1. Ημέρα
2. Αυγή
3. Σούρουπο
4. Νύχτα – Με οδικό φωτισμό
5. Νύχτα – Χωρίς οδικό φωτισμό
6. Άγνωστες

3

ΠΕΡΙΓΡΑΦΗ ΔΡΟΜΟΥ (99)
1. Ευθύς & Επίπεδος
2. Ευθύς & Ανηφορικός/Κατηφορικός
3. Ευθύς & Κορυφή λόφου
4. Στροφή & Επίπεδος
5. Στροφή & Ανηφορικός/κατηφορικός
6. Στροφή & Κορυφή λόφου

ΚΑΤΑΣΤΑΣΗ ΕΠΙΦΑΝΕΙΑΣ ΔΡΟΜΟΥ (116)
1. Στεγνός
2. Βρεγμένος
3. Λασπωμένος
4. Χιόνι / Πάγος
5. Τσακίλι / Άμμος / Χώματα
6. Άλλο**

ΚΑΙΡΟΣ (137)
1. Αίθριος
2. Βροχή / Χαλάζι
3. Ομίχλη
4. Χιόνι
5. Άλλο**

ΠΑΡΑΓΟΝΤΕΣ ΠΟΥ ΣΥΝΕΒΑΛΑΝ ΣΤΗΝ ΠΡΟΚΛΗΣΗ

ΑΝΘΡΩΠΟΣ
01. Αλκοόλη
02. Ναρκωτικά
03. Φάρμακα (Κατόπιν Συνταγής)
04. Ασθένεια (Αιφνίδια)
05. Απώλεια Αισθήσεων
06. Υπνηλία
07. Σωματική ανικανότητα
08. Απειρία Οδηγού
09. Ταχύτητα
10. Παράλειψη τήρησης αριστερής πλευράς του δρόμου
11. Παράλειψη τήρησης κανονικής λωρίδας κυκλοφορίας
12. Αλλαγή λωρίδας (Αντικανονική)
13. Προσπέρασμα από Αριστερά (Αντικανονικό)
14. Προσπέρασμα από δεξιά (Αντικανονικό)
15. Βεβιασμένη επαναφορά μετά από προσπέρασμα
16. Μη παροχή προτεραιότητας σε πεζό σε διάβαση πεζών
17. Μη παροχή προτεραιότητας σε οχήματα
18. Στροφή αριστερά χωρίς προσοχή
19. Στροφή δεξιά χωρίς προσοχή
20. Επαναστροφή «U»
21. Οδήγηση προς τα πίσω
22. Παραβίαση σήματος τροχαίας
23. Παραβίαση φώτων τροχαίας
24. Παραβίαση σήματος Αστυνομικού
25. Απρόσεκτη διασταύρωση σε μη ελεγχόμενη διασταύρωση
26. Παρέλειψε ή έδωσε λανθασμένο σήμα
27. Διαγώνια εκκίνηση από αριστερά
28. Διαγώνια εκκίνηση από δεξιά
29. Απρόσεκτη οδήγηση/Απόσπαση προσοχής
30. Μη τήρηση ασφαλισμένης απόστασης
31. Απότομο σταμάτημα
32. Παρέκκλιση / Εκτροπή από το δρόμο
33. Εκθάμβωση από φώτα άλλων οχημάτων
34. Οδηγός άνοιξε πλευρική θύρα
35. Άλλο λάθος από μέρους του οδηγού**
36. Επιβάτης, ζώο ή φορτίο εμποδίζουν τον οδηγό
37. Επιβάτης άνοιξε πλευρική θύρα
38. Επιβίβαση / Αποβίβαση από λεωφορείο απρόσεκτα
39. Άλλο λάθος από μέρους επιβάτη**
40. Πεζός διασταύρωνε απρόσεκτα
41. Πεζός χρησιμοποιούσε διάβαση πεζών απρόσεκτα
42. Άλλο λάθος από μέρους πεζού**
67. Ελεύθερα χέρια κατά την οδήγηση
68. Ανήλικος οδηγός

ΟΧΗΜΑ
43. Φρένα ελαττωματικά
44. Φώτα μπροστινά ελαττωματικά
45. Φώτα πισινά ελαττωματικά
46. Άλλα φώτα ελαττωματικά**
47. Τιμόνι ελαττωματικό
48. Τροχοί / Ελαστικά ελαττωματικά
49. Μηχανισμός ρυμούλκησης ελαττωματικός
50. Μεταφορά προεξέχοντος φορτίου
51. Υπερφόρτωση
52. Άλλη βλάβη του οχήματος**

ΠΕΡΙΒΑΛΛΟΝ
53. Σήμανση λωρίδων κυκλοφορίας ανεπαρκή / λανθασμένα
54. Σήματα τροχαίας ανεπαρκή / λανθασμένα
55. Φώτα τροχαίας λανθασμένα / εκτός λειτουργίας
56. Ξένα αντικείμενα / ακαθαρσίες στο δρόμο
57. Οδόστρωμα ελαττωματικό (Ανωμαλίες-Λακκούβες)
58. Οδόστρωμα ολισθηρό (Κατασκευή)
59. Παγκέττα ελαττωματικά / Αντικανονικά
60. Οδόστρωμα εκθαμβωτικό (κατασκευή)
61. Ορατότητα εμποδίζεται / περιορίζεται
62. Οδόστρωμα ολισθηρό (καιρός)
63. Άνεμος δυνατός
64. Ήλιος (εκθαμβωτικός)
65. Ζώο στο δρόμο
66. Άλλος περιβαλλοντικός**

ΑΙΤΙΑ1 37–38
ΑΙΤΙΑ2 47–48
ΑΙΤΙΑ3 55–56
ΑΙΤΙΑ 4 77–78

ΟΧΗΜΑ

ΘΕΣΗ ΠΡΩΤΟΥ ΕΠΙΒΛΑΒΟΥΣ ΓΕΓΟΝΟΤΟΣ (98)
1. Εντός του δρόμου
2. Εκτός του δρόμου
3. Άγνωστο

ΤΥΠΟΣ ΔΥΣΤΥΧΗΜΑΤΟΣ

ΣΥΓΚΡΟΥΣΗ ΜΕ ΑΛΛΟ ΟΧΗΜΑ
01. Νωτιαιομετωπική
02. Πλευρική
03. Μετωπική
04. Υπό γωνία
05. Με σταθμευμένο μηχανοκίνητο όχημα
06. Με ποδήλατο

ΣΥΓΚΡΟΥΣΗ ΜΕ ΑΛΛΟ ΚΙΝΟΥΜΕΝΟ ΑΝΤΙΚΕΙΜΕΝΟ (1ο ΓΕΓΟΝΟΣ 138-139)
07. Πεζό
08. Ζώο
09. Άλλο αντικείμενο (Μη στερεωμένο)**

ΣΥΓΚΡΟΥΣΗ ΜΕ ΣΤΕΡΕΩΜΕΝΟ ΑΝΤΙΚΕΙΜΕΝΟ
10. Ηλεκτρικός/Τηλεφωνικός πάσσαλος
11. Προστατευτικό Κατασκεύασμα Ακραίο
12. Προστατευτικό Κατασκεύασμα Ενδιάμεσο
13. Νησίδα Τροχαίας
14. Πεζοδρόμιο
15. Σήμα Τροχαίας
16. Γέφυρα
17. Παραπέτο Γεφυριού
18. Όχθος / Ανάχωμα / Αυλάκι
19. Crash Cushion
20. Κτίριο / Τοίχος
21. Δέντρο
22. Άλλο Στερεωμένο Αντικείμενο**

ΟΧΗΜΑ 1 156-157
2ο ΓΕΓΟΝΟΣ
ΟΧΗΜΑ 2 162-163

ΧΩΡΙΣ ΣΥΓΚΡΟΥΣΗ
23. Ανατροπή μέσα στο δρόμο
24. Εκτροπή από το δρόμο (μόνο)
25. Διασταύρωση κεντρικού διαχωριστικού
26. Άλλο**

ΕΝΕΡΓΕΙΑ ΟΧΗΜΑΤΟΣ ΠΡΙΝ ΤΟ ΔΥΣΤΥΧΗΜΑ
01. Ευθεία Πορεία
02. Στροφή Δεξιά
03. Στροφή Αριστερά
04. Επαναστροφή «U»
05. Εκκίνηση από Στάθμευση
06. Επανεκκίνηση
07. Ελάττωση ταχύτητας ή Σταμάτημα
08. Σε Στάση λόγω Τροχαίας
09. Προσπάθεια Στάθμευσης
10. Σταθμευμένο
11. Αποφυγή Αντικειμένου/ Ανωμαλίας/Λακκούβας δρόμου
12. Αποφυγή Πεζού στο δρόμο
13. Αποφυγή Οχήματος στο δρόμο
14. Αλλαγή Λωρίδων Κυκλοφορίας
15. Προσπέρασμα
16. Είσοδος σε αυτοκινητόδρομο (λωρίδα επιτάχυνσης)
17. Έξοδος από αυτοκινητόδρομο (λωρίδα επιβράδυνσης)
18. Κίνηση προς τα πίσω
19. Άλλη**

ΟΧ. 1 166-167
ΟΧ. 2 168-169

ΕΝΕΧΟΜΕΝΑ ΠΡΟΣΩΠΑ

ΟΧΗΜΑ ΠΟΥ ΕΠΕΒΑΙΝΕ
1. Όχημα Αρ. 1 0. Κανένα όχημα
2. Όχημα Αρ. 2

ΘΕΣΗ ΣΤΟ ΟΧΗΜΑ
1. Οδηγός
2. Καθήμενος επιβάτης στο μπροστινό μεσαίο κάθισμα
3. Συνοδηγός
4–10. Καθήμενοι επιβάτες
11 Ιστάμενοι επιβάτες
12. Άγνωστη θέση

3	2	1
6	5	4
9	8	7
10		

ΑΛΚΟΟΛΗ & ΝΑΡΚΩΤΙΚΑ
1. Κανένα
2. Αλκοόλη - Θετικός
3. Αρνήθηκε να ελεγχθεί
4. Ναρκωτικό - Θετικός
5. Δε ζητήθηκε έλεγχος
6. Άγνωστο

ΣΟΜ. ΑΣΦ.
1. ΑΣΤΥΝ
2. ΕΦ
3. SBA
4. UNFICYP
5. ΕΛΔΥΚ
6. Αγγλ

ΚΡΑΝΟΣ–ΖΩΝΗ ΑΣΦ. – κλπ.
1. Κανένα 2. Ζώνη ασφαλείας
3. Παιδικό κάθισμα
4. Κράνος μοτοσυκλέτας
5. Άγνωστο
6. Ζώνη ασφαλείας Δ.Υ.
7. Κράνος ποδηλάτου

ΕΚΤΙΝΑΞΗ ΑΠΟ ΟΧΗΜΑ
1. Δεν εκτινάχθηκε
2. Εκτινάχθηκε μερικώς
3. Εκτινάχθηκε
4. Άγνωστο

ΕΘΝΙΚΟΤΗΤΑ
1. Κύπριος
2. Τουρίστας
3. Άλλη 176-7

ΦΥΛΟ
1. Αρ.
2. Θηλ.
3. Άγν.

ΗΛΙΚΙΑ (Χρόνια)

ΙΔΙΟΤΗΤΑ ΕΝΕΧΟΜΕΝΩΝ (ΙΔΕ ΚΑΤΑΛΟΓΟ)

ΣΟΒΑΡΟΤΗΤΑ ΤΡΑΥΜΑΤΩΝ
1. Θανατηφόρο
2. Σοβαρά
3. Ελαφρά
4. Κανένα

ΜΕΣΟ ΜΕΤΑΦΟΡΑΣ
1. Ασθενοφόρο Υπ. Υγείας
2. Ασθενοφόρο Πυροσβ.
3. Ασθενοφόρο Ιδιωτικό
4. Ασθενοφόρο Άλλο**
5. Αστυνομικό όχημα
6. Άλλο όχημα
7. Άγνωστο

ΝΟΣΟΚΟΜΕΙΟ
1. Κυβερνητικό/Δημόσιο
2. Ιδιωτική κλινική
3. Κανένα

170 | 171-2 | 173 | 174 | 175 | 178 | 179 | 180 | 181-2 | 183 | 184 | 185

75-6

ΔΙΑΓΡΑΜΜΑΤΑ ΚΙΝΗΣΗΣ ΟΧΗΜΑΤΩΝ ΚΑΙ ΠΕΖΩΝ

ΔΥΣΤΥΧΗΜΑΤΑ ΜΕ ΔΥΟ Ή ΠΕΡΙΣΣΟΤΕΡΑ ΟΧΗΜΑΤΑ

01. Νωτιαιομετωπική (Μπροστά-Πίσω)	02. Προσπέρασμα από δεξιά	03. Προσπέρασμα από αριστερά	04. Μετωπική (εξ αντιθέτου)	05. Πλευρική (εξ αντιθέτου)	06. Σε σταματημένο όχημα
07. Με πισωή κίνηση σε σταματημένο ή κινούμενο όχημα	08. Υπό γωνία	09. Υπό γωνία	10. Υπό γωνία	11. Υπό γωνία	12. Υπό γωνία
13. Υπό γωνία	14. Υπό γωνία	15. Υπό γωνία	16. Υπό γωνία	17. Υπό γωνία	18. Υπό γωνία
19. Υπό γωνία	20. Υπό γωνία	21. Υπό γωνία			

ΔΥΣΤΥΧΗΜΑΤΑ ΜΕ ΕΝΑ ΟΧΗΜΑ

22. Εκτροπή αριστερά	23. Εκτροπή δεξιά	24. Σε σταθερό αντικείμενο	25. Άλλο	41. Ανατροπή εντός του δρόμου	

ΔΥΣΤΥΧΗΜΑΤΑ ΜΕ ΠΕΖΟΥΣ

26. Περπατούσε ή στεκόταν στο δρόμο	27. Διασταύρωνε από αριστερά	28. Διασταύρωνε από δεξιά	29. Διασταύρωνε από αριστερά πίσω από σταματημένο όχημα	30. Διασταύρωνε από δεξιά πίσω από σταματημένο όχημα	31. Διασταύρωνε σε διασταύρωση ή συμβολή
32. Διασταύρωνε σε διασταύρωση ή συμβολή	33. Διασταύρωνε σε διασταύρωση ή συμβολή	34. Διασταύρωνε σε διασταύρωση ή συμβολή	35. Διασταύρωνε σε διασταύρωση ή συμβολή	36. Διασταύρωνε σε διασταύρωση ή συμβολή	37. Διασταύρωνε σε διασταύρωση ή συμβολή
38. Διασταύρωνε σε διασταύρωση ή συμβολή	39. Διασταύρωνε διαγώνια	40. Άλλο			

ΤΥΠΟΣ ΣΥΜΒΟΛΗΣ

79

1. ή Διασταύρωση δύο ή περισσοτέρων δρόμων
2. Συμβολή «Τ»
3. Εναλλασόμενο «Τ»
4. Συμβολή «Υ»
5. Κυκλικός κόμβος
6. Λωρίδα επιταχύνσεως ή επιβραδύνσεως αυτοκινητόδρομου
7. Άλλος
8. Εκτός συμβολής

Α. ΕΠΙΤΡΕΠΟΜΕΝΕΣ ΠΟΡΕΙΕΣ ΤΡΟΧΑΙΑΣ

80

1. Μονή
2. Διπλή
3. Αμφότερες (μόνο σε συμβολές)

Β. ΔΙΑΧΩΡΙΣΤΙΚΟ ΔΡΟΜΟΥ

81

1. Κανένα
2. Διακεκομμένη γραμμή
3. Μονή συνεχής γραμή
4. Διπλή γραμμή
5. Ζωγραφιστή νησίδα
6. Φυσικό εμπόδιο
7. Νησίδα χωρίς φυσικό εμπόδιο
8. Συνδυασμός περισσοτέρων από ένα από τα πιο πάνω.

Γ. ΣΤΕΝΩΣΗ ΔΡΟΜΟΥ

82

1. Κανένα
2. Γέφυρα μιας κατεύθυνσης
3. Γέφυρα διπλής κατεύθυνσης
4. Άλλη

Δ. ΤΥΠΟΣ ΟΔΟΣΤΡΩΜΑΤΟΣ

83

1. Άσφαλτος
2. Πέτρινος
3. Χωμάτινος
4. Άλλος

Ε. ΤΥΠΟΣ ΠΑΓΚΕΤΤΟΥ / ΠΕΖΟΔΡΟΜΙΟΥ

84

1. Πεζοδρόμιο
2. Παγκέττο επιστρωμένο
3. Παγκέττο χωμάτινο
4. Τίποτε

ΤΥΠΟΣ ΟΧΗΜΑΤΟΣ

158-9

01. Ποδήλατο
02. Μοτοποδήλατο (μέχρι 49CC)
03. Μοτοσυκλέττα (50CC και πάνω)
04. Ταξί
05. Αυτοκίνητο ενοικίασης «Ζ»
06. Άλλο SALOON
07. Μικρό Λεωφορείο
08. Λεωφορείο
09. Πικάπ μέχρι 2 τόνους - Μονά πισινά λάστιχα
10. Βαν μέχρι 2 τόνους - Μονά πισινά λάστιχα
11. Φορτηγό - 2 άξωνες - Διπλά πισινά λάστιχα
12. Βαρύ Φορτηγό - Περισσότερο από 2 άξωνες
13. Αρθρωτό Βαρύ Φορτηγό
14. Γεωργικός Ελκυστήρας
15. Άλλο μηχ. Όχημα
16. Ζώο ή άμαξα
17. Άγνωστο
18. Τετράτροχη μοτοσυκλέτα
19. Μοτοσυκλέτα με κουβούκλιο
20. Τρίκυκλο
21. Μηχανοκίνητο Scooter

ΖΗΜΙΕΣ ΠΡΩΤΗΣ ΕΠΑΦΗΣ

[redacted] 160-1

8 1 2
7 9 3
6 5 4

01. Μπροστινό μέρος
02. Δεξιό μπροστινό φτερό
03. Δεξιά θύρα(ες)
04. Δεξιό πισινό φτερό
05. Πίσω μέρος
06. Αριστερό πισινό φτερό
07. Αριστερή θύρα(ες)
08. Αριστερό μπροστινό φτερό
09. Οροφή
10. Κοιλιά
11. Κανένα

ΑΣΘΕΝΟΦΟΡΟ ΕΙΔΟΠΟΙΗΘΗΚΕ ΥΠΟ:

211

[—] Δεν ειδοποιήθηκε
1. Ενεχόμενος
2. Περαστικός
3. Αστυνομικός
9. Άγνωστος

ΑΣΦΑΛΙΣΤΙΚΕΣ ΕΤΑΙΡΕΙΕΣ

01. AEGIS INSURANCE COMPANY LTD
33. ALLIANZ GENERAL INSURANCE CO. S.A.
34. ALPHA INSURANCE LTD
02. AMERICAN HOME ASSURANCE CO
35. AMERICAN LIFE INSURANCE CO
36. ASPIS PRONIA INSURANCE CO
03 ASTIR INSURANCE COMPANY S.A.
04. ATLANTIC INSURANCE CO. LTD
05. THE BALOISE INSURANCE CO. LTD
06. CIGNA INSURANCE COMPANY OF EUROPE S.A.U.V.
07. COMMERCIAL UNION ASSURANCE (CYPRUS) LTD
08. COMPASS INSURANCE COMPANY LTD
09. CONTINENTAL INSURANCE COMPANY LTD
10. COSMOS (CYPRUS) INSURANCE CO LTD
37. ECCLESIASTICAL INSURANCE OFFICE PLC
38. ETHNIKI GENERAL INSURANCE (CYPRUS) LTD
39. ETHNIKI INSURANCE (CYPRUS) LTD
40. EUROLIFE LTD
41. EUROSURE INSURANCE CO. LTD
42. GAN DIRECT INSURANCE LTD
11. GENERAL ACCIDENT FIRE & LIFE ASSUR. CORP. LTD.
12. GENERAL INSURANCE COMPANY OF CYPRUS LTD
13. GRESHAM FIRE AND ACCIDENT INSUR. SOCIETY LTD
14. GUARDIAN ROYAL EXCHANGE ASSURANCE PLC
43. HELLENIC ALICO LIFE INSURANCE CO LTD
44. HELLENIC JULL MUTUAL ASS. (HMA) LTD
15. HERMES INSURANCE COMPANY LTD
45. HYDRA INSURANCE LTD
46. INTERLIFE INSURANCE CO. LTD
16. IRIS INSURANCE COMPANY LTD
17. KENTRIKI INSURANCE COMPANY LTD
47. LAIKI CYPRIALIFE LTD
18. LAIKI INSURANCE CO. LTD
19. LEGAL AND GENERAL ASSURANCE SOCIETY LTD
48. LIBERTY LIFE INSURANCE PUBLIC LTD
20. LLOYD'S UNDERWRITERS
21. L'UNION DES ASSURANCE DE PARIS IARD
22. MINERVA INSURANCE COMPANY LTD
23. NORWISH UNION FIRE INSURANCE SOCIETY LTD
51. OLYMPIC INSURANCE CO. LTD
24. PANCYPRIAN INSURANCE COMPANY LTD
25. PANEUROPEAN INSURANCE COMPANY LTD
26. PHILIKI INSURANCE COMPANY LTD
27. PHONIX ASSURANCE PLC
28. PHOENIX GENERAL INSURANCE CO. OF GREECE S.A.
29. PEARL ASSURANCE
52. PROGRESSIVE INSURANCE CO LTD
53. ROYAL CROWN INSURANCE CO LTD
30. ROYAL INTERNATIONAL HOLDINGS LTD
31. SUN INSURANCE OFFICE LTD
32. ΚΟΙΝΟΠΡΑΞΙΑ ΑΣΦΑΛΙΣΤΩΝ
49. ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
50. OTHER
54. UNIVERSAL LIFE INSURANCE CO LTD
55. YDROGIOS INSURANCE CO (CYPRUS) LTD
00. ΔΕΝ ΥΠΑΡΧΕΙ ΑΣΦΑΛΕΙΑ
99 UNKNOWN

ΒΑΘΜΟΣ ΕΞΕΤΑΣΤΗ (Σημείο 186)

— AA Αστυφύλακας
— EE Λοχίας
JJ Ανώτερος Υπαστυνόμος
BB Αρχιαστυφύλακας
FF Αρχιλοχίας
HH Προσωρινός Υπαστυνόμος
II Προσωρινός Ανώτερος Υπαστυνόμος
DD Προσωρινός Λοχίας
40 Ειδικός
60 Τακτικός
— GG Υπαστυνόμος

ΚΩΔΙΚΟΙ ΑΡΙΘΜΟΙ ΑΣΤΥΝΟΜΙΚΩΝ ΣΤΑΘΜΩΝ

(Σημείο 4-6)

Αστυνομική Διεύθυνση Λευκωσίας

Τροχαία	2112
Άγιος Δομέτιος	2150
Λυκαβητός	2151
Ομορφίτα	2152
Πύλη Πάφου	2153
Στρόβολος	2154
Δευτερά	2160
Κλήρου	2161
Παλαιχώρι	2162
Πέρα Χωρίο	2163
Περιστερώνα	2164
Κοκκινοτριμιθιά	2165
Λακατάμεια	2170

Αστυνομική Διεύθυνση Αμμοχώστου

Τροχαία	2512
Αγία Νάπα	2560
Αυγόρου	2561
Δερύνεια	2562
Ξυλοτύμπου	2563
Ξυλοφάγου	2564
Παραλίμνι	2565

Αστυνομική Διεύθυνση Λεμεσού

Τροχαία	2312
Κεντρικός	2350
Άγιος Ιωάννης	2352
Άγιος Νικόλαος	23502
Αγρός	2360
Αυδήμου	2361
Γερμασόγεια	2351
Επισκοπή	2362
Καλό Χωρίο	2363
Λάνια	2364
Μονή	2365
Πάχνα	2366
Πλάτρες	2367
Τρόοδος	2368
Πισσούρι	2370
Πολεμίδια	2376

Αστυνομική Διεύθυνση Λάρνακας

Τροχαία	2212
Αθηαίνου	2260
Αραδίππου	2261
Καλαβασός	2262
Κίτι	2263
Κοφίνου	2264
Λεύκαρα	2265
Ορόκλινη	2266

Αστυνομική Διεύθυνση Πάφου

Τροχαία	2412
Κούκλια	2460
Παναγιά	2461
Πόλη Χρυσοχούς	2462
Πύργος	2463
Στρουμπί	2464
Πέγεια	2465
Κελοκέδαρα	2466

Αστυνομική Διεύθυνση Μόρφου

Τροχαία	2612
Αστρομερίτης	2660
Ευρύχου	2661
Κακοπετριά	2662
Κάμπος	2663
Πεδουλάς	2664

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ΙΔΙΟΤΗΤΑ ΕΝΕΧΟΜΕΝΩΝ (Σημείο 181-2)

01. Πεζός
02. Ποδηλάτης
03. Επιβάτης ποδηλάτου
04. Οδηγός μοτοποδηλάτου
05. Επιβάτης μοτοποδηλάτου
06. Οδηγός Μοτοσυκλέτας
07. Επιβάτης Μοτοσυκλέτας
10. Οδηγός (Άλλων Οχημάτων)
11. Επιβάτης (Άλλων Οχημάτων)
12. Αναβάτης ζώου
13. Οδηγός ταξί
14. Επιβάτης ταξί
15. Οδηγός αυτοκινήτου ενοικίασης Ζ
16. Επιβάτης αυτοκινήτου ενοικίασης Ζ
17. Οδηγός σαλούν
18. Επιβάτης σαλούν
19. Οδηγός μικρού λεωφορείου
20. Επιβάτης μικρού λεωφορείου
21. Οδηγός λεωφορείου
22. Επιβάτης λεωφορείου
23. Οδηγός Πικάπ-διπλοκάμπινου
24. Επιβάτης Πικάπ-διπλοκάμπινου
25. Οδηγός Βαν
26. Επιβάτης Βαν
27. Οδηγός φορτηγού-2 άξωνες
28. Επιβάτης φορτηγού-2 άξωνες
29. Οδηγός - Βαρύ φορτηγό (Περισσότερο από 2 άξωνες)
30. Επιβάτης -Βαρύ φορτηγό (Περισσότερο από 2 άξωνες)
31. Οδηγός - αρθρωτό βαρύ φορτηγό
32. Επιβάτης - αρθρωτό βαρύ φορτηγό
33. Οδηγός γεωργικού ελκυστήρα
34. Επιβάτης γεωργικού ελκυστήρα
35. Οδηγός άμαξας
36. Επιβάτης άμαξας
37. Οδηγός τετράτροχης μοτοσυκλέτας
38. Επιβάτης τετράτροχης μοτοσυκλέτας
39. Οδηγός μοτοσυκλέτας με κουβούκλιο
40. Επιβάτης μοτοσυκλέτας με κουβούκλιο
41. Οδηγός τρικύκλου
42. Επιβάτης τρικύκλου
43. Οδηγός μηχανοκίνητου Scooter
44. Επιβάτης μηχανοκίνητου Scooter

ΚΩΔΙΚΟΙ ΑΡΙΘΜΟΙ ΚΑΤΑΣΚΕΥΗΣ ΟΧΗΜΑΤΩΝ (ΜΑΡΚΑ)

0002	A.E.C.	0564	BASQUAL	0899	CAN-AM	0839	DAVINO	0428	FERRARI	0298	H J H
0003	A.J.S.	0651	BATAVUS	0594	CANDIA	0974	DAX	0045	FIAT	1128	H.B.M.
0530	A P BCH DUGY	0375	BAVER	0156	CAPRI	1035	DAYANG	0759	FIAT-ALLIS	0493	HAFLINGER
0939	A.W.D.	0531	BEACH BUGGY	0348	CARLISLE	1135	DAYTONA	1041	FIAT-HITACHI	0221	HAKO
0857	A.E.M.	0016	BEDFORD	0657	CARMAN ORMI	1169	DAZON	0207	FIGARO	0491	HAKOTRAC
0599	A.M.C	0988	BELAPYCB	0600	CARMEL	0036	DE SOTO	0433	FILIPPO JORI	0476	HAKOWERKE
0858	A.T.M.	0799	BELARUS	1078	CARMICHAEL	0816	DELTA	0381	FINETTE	0808	HAMM
0366	ABERDALE	0329	BELLA	0798	CARMIX	0702	DEMAG	0444	FIORELLI	0059	HANOMAG
0911	ABG	0617	BELLARUGE	0427	CARRARO	0630	DEMM	0764	FIORI	0055	HANSE
0001	AC	0435	BENASSI	0778	CASAL	0152	DENNIS	0788	FIPS	1071	HAO-QING
0185	ACADIAN	0346	BENELLI	0150	CASE	0586	DERBI	0276	FLANDRIA	0519	HAR DVD BRZA
1153	ACCESS	0747	BENFRA	0414	CASORZO	0663	DETOMASO	0916	FLEUR DE LYS	0624	HARBILT
0634	ACEDES	0956	BENNY	0471	CAST	0405	DEUTZ	0344	FLORELL	0264	HARLEY DAVIDSON
0275	ACHILLES	0017	BENTLEY	0928	CATERHAM	0766	DI BLASI	0489	FLORETT	1159	HARTFOTD
0004	ADLER	0931	BENYE	0024	CATERPILLAR	0191	DIAMOND	0796	FLYING DUTCH	0925	HATMAN-COM-
1016	ADLY	0683	BERXOBUHA	0929	CCC	0822	DIEGI	0524	FN		PACT
0661	ADR. PANTERA	0307	BERFORD	1083	CCM	0454	DINGLER	0146	FODEN	0569	HATRA
0282	ADVANCE	0312	BERINI	0283	CECCATO	1160	DINLI	0326	FOLLIS	0875	HAULAMATIC
1099	AEON	0291	BERKLEY	0611	CHALENDER	0861	DITCHWITCH	0046	FORD	0774	HAULPAK
0331	AER MACCHI	0844	BERLIET	1024	CHANGAN	0034	DKW	1066	FORD-IVECO	0644	HEATHKIT
0421	AFTOFEROMNO	0452	BERTOLINI	1008	CHAPMAN	0790	DLM	0047	FORDSON	0658	HEGE
0806	AGRARIA	0013	BETA	0705	CHEVELAND	0952	DNIEPER	0338	FORELLA	0271	HEINKEL
0133	AGRIA	0892	BETOMES	0025	CHEVROLET	0037	DODGE	0709	FORTSCHRITT	0650	HENDRIKSON
0214	AGRIETTA	0869	BETTIBONE	1125	CHONGQING	0505	DOMENIGHETTI	0667	FORTUNIVER	0315	HENSCHEL
0934	AGROZET	0593	BEYLAVOR	0026	CHRYSLER	0876	DONG-A	0309	FOWLER	0933	HERCHEE
0215	AGUSTA	0305	BFALO SP FLD	1069	CHUNLAN	0038	DORMAN	0737	FOXI	0179	HERCULES
0831	AKERMAN	0377	BIANCHI	0520	CIMATTI	0039	DOT	0049	FRAN BARNETT	0240	HERCUMOTOR
0583	AKRIV. FISHER	0494	BIEMMECI	0012	CITA	0040	DOUGLAS	0629	FRANKLIN	0286	HERMES
0951	AL GADAH	0742	BIMM	0027	CITROEN	0220	DUCATI	1146	FREEDOMOTOR	1015	HERO
0005	ALBION	0744	BIMOTOR	0792	CKD-PRAGA	0904	DULEVO	1031	FREIGHTLINER	0985	HERO-PUCH
0162	ALFA ROMEO	0308	BINETTA	0181	CLAAS	0145	DUNTZ	1091	FRESIA	1059	HESSTON
0188	ALIS CHALMRS	1067	BINGO	0183	CLAEYS	0371	DURANT	0903	FRISCH	1048	HICOM
1000	ALL WHEEL DR	0328	BINZ	0739	CLAN	0851	DUTTON	0273	FRISKY	1060	HIGHSPEC
0345	ALLEN	0228	BISMARK	0360	CLARK	0147	DURKOPP	0955	FTF LIPECK	0056	HILLMAN
0323	ALPINO	0703	BITELLI	0324	CLARKSON	0851	DUTTON	1098	FUCHS	0972	HINGTAI
0006	ALVIS	0178	BITRI	0439	CLAYSON	0041	DYNA PANHARD	0196	FUJI	0400	HINO
0007	AMBASSADOR	0830	BITTOBONE	0354	CLETRAX	0779	DYNAPAG	0321	FURCHS	0482	HINOMOTO
0775	AMERICAN	0335	BLAWKNOX	0802	CLEVELAND	0349	ERF	1148	FUTONG	1164	HL TRIKES
0953	AMIGO	0467	BLMC	0740	CLINTON	0134	E S B DIAMON	0390	G M C	0258	HMW
0340	AMORETTE	0549	BLOW KNOX	0406	COLES	1045	E.M.W.	0711	G.M.E.	0914	HOFMANN
0403	AMPHICAR	0750	BM	0239	COLIBRI	1141	EAGLE	0522	GALLION	0296	HOFNR MZKRTO
0673	ANGEL	0780	BOB-CAT	0431	COLT	0688	EARLY RIDER	0460	GARELLI	0408	HOLDEN
0155	ANSALDO	0511	BOLGAR	0404	COMAR	0636	EBRO	1051	GAS GAS	0144	HOLDER
0783	APRILIA	0620	BOMAG	0466	COMER ROOTES	1073	ECOLOGICA	0389	GAZ	0252	HOLLAND
0746	ARGYLE	0256	BOND	0865	COMET OPERA	0969	EDER	0654	GECOM	0189	HONDA
0008	ARIEL	0957	BONNY	0028	COMMER	0376	EFFEPI	1061	GEELY	1124	HONGDOU
0009	ARMSTRONG	0710	BONSER	0741	CONDOR	0243	EICHER	0900	GEHL	0148	HOREX
0577	ARO	1152	BOOM	0347	CONTESSA	0200	EMPOLINI	0656	GEMINI	0456	HORNET
0556	ARROW	0018	BORGWARD	0225	CONVEYANCER	0707	ELLI DIECI	0689	GENERAL	0499	HOUCHIN
0862	ASIA	1055	BOSCHUNG	0205	CONY	0241	ELVA	0981	GENITEC	0370	HOUGH
0704	ASTOA	0836	BOVA	0881	COPELYN	0200	EMPOLINI	0265	GENSEN	0418	HOWARD
0313	ASTON MARTIN	0269	BOWN	0353	COR DIRA LUX	1025	EOS	0182	GILERA	1144	HUADONG
0332	ASTRA	0891	BRAVO	0236	CORGI	1161	E-TON	0932	GINETTA	0568	HUBER
1120	ATALA	0500	BRAY	0986	CORPET LOUVET	0451	EUCLID	0595	GITANE	0057	HUDSON
0161	ATKINSON	0306	BRAYLOADER	0856	COSMOS	0999	EUNOS	0385	GIULIETTA	0058	HUMBER
0320	ATLAS	0140	BRISTOL	0554	COTIL	0473	EUROMOPED	0336	GLAMOR	0290	HUMMEL
0211	AUDI	0924	BRITISH-HOIS	0770	COTTON	0867	EUROPA2	0417	GLAS	0204	HURRICANE
0819	AUSA	0996	BRIVER	0029	COVENTRY	0886	EUROPINO	0419	GLAYSON	1057	HUSABERG
0010	AUSTIN	0812	BRONCO	0905	COVIN	0044	EXCELSIOR	0637	GLORIA	0887	HUSQVARNA
0488	AUTO EXPORT	0485	BRUMI	0187	COVNTRY CLMX	0621	EXPORT	0052	GOCQ MOBIL	0758	HUTA STALOWA
0432	AUTOBIANCHI	0141	BRUMNI	1039	CPI	0043	EXPRESS	0463	GOLDONI	0437	HY MAC
0458	AUTOCAR	0372	BTZ	0805	CRANE CARRIE	0793	F LLI DIECI	0641	GOLF	0967	HUCO ICOMA
1033	AUTOZAM	1130	BUCHER	0821	CRAYFORD	0051	F M R	0053	GOLIATH	0604	HYDROCON
0632	AUTOZODSACO	1038	BUELL	0031	CROSSLEY	0356	F W D	0272	GORGI	1030	HYOSUNG
0917	AUVERLAND	0665	BUFFALO	0030	CROWLER	0591	F.B.	1080	GOTTWALD	0304	HYSTER
0339	AVAROS	0833	BUHLER MIAG	1005	CROWN	0880	F.S.O.	0529	GRADER	0692	HYUNDAI
0136	AVELING BARF	0019	BUICK	1077	CUSTOM	0135	FACEL VEGA	0374	GRAHAM	1132	HZMMCO
0601	AVIA	0380	BULKAN	0223	CYCLEMASTER	0251	FAHR	0885	GRAVETTI	0064	I S O
0992	B. STREICH	1137	BULL	0032	CYRUS	0327	FAKA	0612	GRAZIELLA	0608	I.L.O.
0434	B.C.S.	0590	BULTACO	0163	D A F	1007	FALCON	0054	GREEN	0358	IFA
0424	B.M.C.	0722	BUMAR	0250	D O W	0589	FANTIC	0154	GREEVES	0597	IHI-SHIBAURA
0015	BMW	0131	BUNGARTZ	0566	D-211B	0508	FAP	0459	GRIFO	0062	IMPERIAL
0014	B S A	0888	BURLINGTON B	0950	D.F.N.	1151	FARESIN	0682	GRILLO PINTZA	0209	IMT
0645	BABETTA	0868	BUTACO	0841	D.J.B		HAULOTTE	0139	GRIZNER	0063	INDIAN
0732	BAJAJ	0607	BYELARUS	0970	DAC	0048	FARGO	0773	GROVE	0666	INGERSOLL
0484	BALKAN	0946	C E D	0596	DACIA	0477	FARMOBIL	0584	GUCLID	0662	INNOCENTI
0797	BALKANCAR	0253	CMN	0909	DAE DONG	0843	FAUN	0355	GUDROD	0061	INTERNATIONAL
0628	BALKANIA	1106	C T M	0870	DAELIM	1003	FDI-SAMBRON	0357	GULDNER	0284	INVICTA
0575	BANTAM	0022	C Z	0941	DAEWOO	0696	FEDERAL	0295	GUIZZO	1157	IRISBUS
0803	BARALDI	0776	C.C.C	0219	DAIHATSU	0602	FENDT	0357	GULDNER	0625	IRON FAIRY
0550	BARBER GREEN	0023	CADILLAC	0035	DAIMLER	0938	FENG-SHOU	0461	GULPMATIC	0539	IRUSFG
0468	BARBIERI	0486	CADY	0923	DALLAS	0289	FERBEDO	0919	GUTBROD	0507	ISEKI
0392	BARKAS	0834	CAGIVA	0165	DATSUN	0050	FERGUSON	0448	GUY	0065	ISETTA
1165	BAROSSA	0915	CALIFFONE	0042	DAVID BROWN	1029	FERMEC	0333	GUZZI		→

ΚΩΔΙΚΟΙ ΑΡΙΘΜΟΙ ΚΑΤΑΣΚΕΥΗΣ ΟΧΗΜΑΤΩΝ (ΜΑΡΚΑ)

0171	ISUZU
0638	ITALGRU
0510	ITALIAN
0791	ITALJET
0832	ITALMACCHINE
0536	ITAM
0864	IVECO
0383	J C B
0369	J L O
0619	J/OR TORISMO
0066	JAQUAR
0068	JAMES
0234	JAVELIN
0069	JAWA
1126	JBW
0267	JEEP
0470	JEEP WGONEER
0570	JENS A. SCHOU
0469	JENSEN
1044	JIALING
1004	JIANSHE
0676	JIMINI
0976	JINCHENG
1145	JINLUN
1082	JINMA
0785	JOHN ALLEN
0175	JOHN D LANZ
0498	JOHN DEERE
1121	JOHNSTON
0690	JOHS MOLLERS
1118	JOKER
0848	JONCKEERE
0168	JONES
0067	JOWETT
0753	JUILI
0384	JUMBO
0653	JUMZ-6M
0587	K.M.C.
0557	K.T.M.
1001	KAELBLE
0465	KAIZER FRAZR
1081	KAMA
0937	KAMAZ
1092	KANGDA
1085	KARCHER
0926	KARMANN
0060	KARRIER
0852	KASSBOHRER
1036	KATO
0415	KAWASAKI
1100	KAWATA
1156	KEEWAY
0492	KEF
0249	KEMNA
0977	KEWET
0760	KIA
0679	KICCO
1021	KINETIC
1070	KING LONG
1064	KIOTI
0712	KITIM
0734	KLINTON
0386	KNOX
1058	KOBELCO
0633	KOCKUM
0416	KOMAR
0573	KOMATSU
0959	KOTIR
0176	KOVROVETS
0440	KRAZ
0021	KREIDLER
0912	KRUPP
0771	KUBOTA
1009	KYMCO
0782	KYNAST
0582	LADA
0218	LAMBORGHINI
0074	LAMBRETTA
1026	LAMBRO
0399	LANCER
0071	LANCHESTER
0137	LANCIA
0430	LAND MASTER
0072	LAND ROVER
0652	LANDER TRCTR
0990	LANDINI
0995	LANXIANG
0279	LANZ
0743	LASER
0164	LAVALETTE
0455	LAVERDA
0646	LAZ
0983	LDV
0497	LE TOURNA
0216	LEA FRANCIS
0084	LEGNANO
0733	LEM
0948	LEXUS
0173	LEYLAND
1014	LEYLAND-DAF
0989	LIAZ
1096	LIBRA
0285	LIDO
0755	LIEBHERR
1088	LIGIER
0412	LILAC
0293	LILLI
0367	LINCOLN
0883	LINER GIRAFFE
1131	LINGYUN
1150	LINHAI
0829	LINK BELT
0325	LISTER
0202	LIVERDA
0073	LLOYD
1068	LML
0297	LNSNG BAGNAL
0963	LOCATELLI
0884	LORAIN
0255	LOTUS
0768	LOVER
0738	LUNA
0446	M 461
0784	MBA
0825	MBU
1097	MCW
0076	M G
0464	M P M
0513	M T B
0177	M T Z
0669	M. B.
0603	M.G.B.
0509	MAB
0949	MACAL
0407	MACHNE EXPRT
1109	MACMOTER
0572	MAFI-DOUGLAS
0559	MAG
1139	MAGIC
0277	MAGIRUS DEUTZ
0238	MAGNEET
0521	MAGNUM
0906	MAHINDRA
0244	MAICILETTA
0280	MAICO
0815	MAIT
0920	MAJESTIC
0429	MALAGUTI
0678	MALANCA
0962	MALKI
0075	MAN
0343	MANDSLY
0397	MANET
0801	MANITOU
1101	MANNS
0342	MANUHRIN
0157	MARCHAL
0546	MARCOS
0563	MARINA
0936	MARINER
0882	MARKHANDLER
0518	MARKOS MANDS
0877	MARLIN
0908	MARTIMEX
1107	MARUTI
0544	MASERATI
0143	MASSEY FERGU
0082	MASSEY-HARRI
0648	MATADOR
0201	MATBRO
0081	MATCHLESS
0266	MAYET
0387	MAYHEW
0425	MAZ
0224	MAZDA
0927	MBK
0736	MBM
1134	MCC
0537	MEBEA
0731	MEGO
0077	MERCEDES
0078	MERCURY
1012	MERLIN
0835	MERLO
0422	MERTON
0314	MESSERCHMIT
0964	MESSERSI
1050	METALINE
0186	MICHIGAN
0151	MIELE
0715	MILANI
0268	MILLANO
0592	MINARELLI
0670	MINCK
0994	MING-XING
1089	MINI
1006	MINI-MOKICK
0533	MITSUBISHI
0235	MIYAPET
0197	MMB
0698	MMYZ
0365	MNAPOL MLIND
0242	MOBY
0083	MOBYLETTE
1072	MODENAS
0532	MOFA
0516	MOKIH STAR
0842	MOL
1113	MONARCH
0420	MONDESSA
0855	MONTGOMERY
0153	MONZA
0300	MOPED
0079	MORGAN
0080	MORRIS
0781	MORRISON
0158	MOSKVICH
1115	MOTO AUPA
0517	MOTO GUZZI
0720	MOTO-MORINI
0691	MOTOACE
0194	MOTOBECANE
0548	MOTOBENASSI
0398	MOTOBI
0756	MOTOBIMM
0642	MOTOCONFORT
0765	MOTODELTA
0138	MOTOM
0672	MOTOZAPPA
0457	MOTOZZAPPE
0728	MOTRON
0930	MOVIMIX
0576	MOWER
0966	MOXY
0813	MP
0664	MRELA-BENE
1093	MUDAN
0800	MUHCK
0622	MUIR HILL
0579	MURAVEI
0574	MYPABEH
0341	MZ
0090	N S U
0438	NACIONAL
0086	NASH
0303	NEAL
0401	NECKAR
0660	NEGRINI
0944	NEOPLAN
1019	NEW HOLLAND
0089	NEWMAN
0410	NIBBI
1032	NIHONFORD
0411	NISSAN
0195	NOBEL
0585	NOGGERATH
0889	NOMAD
0364	NORMAG
0087	NORMAN
0088	NORTON
0085	NUFFIELD
0804	NUOVA FIM
0824	NURSERY MASTER
0684	NVT
0767	O M J
0814	O. M. C.
0817	O.M.E.S.
0092	OLDSMOBILE
0094	OLIVER
0718	OLMA
0613	OLYMPIA
0729	OMER
0093	OPEL
0695	ORENSTEIN
0701	ORENSTEIN & KOPPEL
0921	ORMI
0409	OSCAR
1062	OSHKOSH
0697	OSSA
0561	OVERLAND
0838	P & H
0945	P G O
0474	P G S
0598	P & H
0706	P.P.M.
0745	PACER
0351	PACKARD
0479	PADANA
0192	PALOMA
0299	PANNONIA
0208	PANTHER
0288	PAPERINO
0098	PARILLA
0655	PASBO
0091	PASHLEY
0503	PASQALI
0247	PASQUALI
0245	PAZ
0302	PEERLESS
0973	PERLINI
1017	PERODUA
0749	PERTOLINI
0807	PETER
0971	PETERSON
0248	PETTER
0095	PEUGEOT
0132	PHILIPS
0677	PIAGGIO
0281	PIATTI
1074	PILGRIM SUMO
0681	PING-PONG
0840	PINGUELY-HAULOTTE
0878	PINZGAVER
0310	PIONEER
0571	PIPER
1020	PISTA
0907	PLICO
0096	PLYMOUTH
0423	POCLAIN
1034	POLAR
0763	POLONEZ
0647	POLSKI FIAT
0752	POLYTRAK
0097	PONTIAC
0180	PORSCHE
0826	POU-YEN
0947	POWER CURBER
0980	PRATAP
0475	PRETIS
0890	PRIESTMAN
0311	PRIMA
0167	PRINCE
0721	PRINCESS
1133	PRINOTH
0317	PRIOR
0198	PROGRESUL
0961	PROTON
0512	PRUMI
0099	PUCH
0708	Q.M.E
1090	QIANJIANG
0984	QINGQI
1040	QJIANG
0849	QUEST 80
0274	QUICKLY
0105	R A P
0426	RABBIT
0402	RAF
0102	RALEIGH
0130	RAMBLER
0615	RANGE-ROVER
0514	RANGER
0257	RANSOMES
0618	RAPIER-N.C.K.
1116	RAVO
1027	RAYGO
0361	RAYNAL
0545	REBEL
0481	RECORD
0716	REEF
0020	REGINA
0233	RELIANT
0104	RENAULT
0478	REO
1170	REVA
1167	REWACO
0292	REX
1084	RIEJU
0388	RIGA
0100	RILEY
0982	RIOPAL
0960	RITMO
0363	RITSCHER
0787	RIVARA
0318	RIXE
0649	RIZZATO
0222	ROAMER
1117	ROBIN HOOD
0350	ROLLS ROYCE
0777	ROMAN
0270	ROSS
0259	ROTARY
0101	ROVER
0103	ROYAL-ENFIELD
0373	RUDGE
0526	RURAL PIOGIA
0237	RUSTON
0795	S & P
0379	SHL
0686	S M C
0160	SAAB
0232	SABRA
0735	SACHS
0726	SAEHAN BIRD
0713	SAFEWAY
1147	SAHRA JEEP
0902	SAKAI
0854	SAM
0070	SAME
1037	SAMSUNG
0901	SANDERSON
0935	SANOS
0809	SANYANG
0538	SATQH
0998	SATURN
0845	SAVIEM
0748	SCALAMBRA
0116	SCAMMEL
0472	SCANIA
0436	SCANIA VABIS
0895	SCARAB
0847	SCHAEFF
0965	SCHAFFER
0206	SCHEIA
0866	SCHMIDT
0685	SCHWING
0671	SCIROCC
0818	SCOTT
0246	SCOUTEX
0447	SEAT
1076	SECMA
0114	SEDDON
1010	SEMANATOAREA
0893	SENNEBOGEN
1013	SEPIA
0588	SETRA
0541	SHEID
0687	SHELVOKES-DRENRY
0940	SHENNIU
0553	SHIBAURA
1155	SHINERAY
1104	SHINING
0523	SHUKUROGLOU
1043	SIAMOTO
0978	SICAS
0450	SIMALTI
0487	SIMATTI
0106	SIMCA
0480	SIMESA
0769	SIMONINY
0184	SIMSON
0107	SINGER
1129	SINSKY
0108	SKODA
0958	SLAVIA
1103	SMART
0675	SMILY
0319	SMITH
0565	SOLEX
0751	SOLO
1052	SPACE
0213	SPARTA
0609	SPRITE
0894	SSANGYONG
0109	STANDARD
1028	STANDARD-MOTO
0723	STARLITE
1053	STARWAY
0853	STAVOSTROU
0639	STEPHEN
0115	STEYR
0542	STOT VIBROLL
0828	STOTHERT-PITT
1138	STREETFURY
0110	STUDEBAKER
0210	SUBARU
1110	SUKIFU
0111	SUN
0112	SUNBEAM
0113	SUBEAM TALBOT
0993	SUNDIRO
0525	SUPER CALIFO
0846	SUPER SEVEN
0263	SUPERIA
0368	SUPREME
1119	SURPASS
0717	SUVEGA
1042	SUZUE
0170	SUZUKI
0811	SVEDALA ARBRA
0643	SWAN
1018	SYM
0443	T C M
0987	T G B
0287	T W N
0635	T G A
0562	T.V.R.
0668	T100M
0610	T25
0614	T54B
0859	TADANO
1105	TAFE
0560	TAILOR HYDRA
1047	TAISHAN-25
0730	TALBOT
0501	TAM
1094	TAMROCK
0352	TANDON
0627	TAS-TAKA
0897	TATA
0174	TATRA
0578	TATRAN
0142	TAUNUS
0942	TAVRIA
0496	TAYLOR-JUNBO
0922	TAZ
0261	TCHAIKA
0490	TECHNO EXPRT
0543	TECUMSEH
0860	TELEKRUISER
0118	TEMPO
0534	TEREX
0149	TERRATRAC
0190	TERROT
0623	TESTI
0580	THAMES
0316	THOMPSN BROS
0117	THORNYCROFT
1049	THUNDER BIKE
0199	THUNDERSLEY
0997	THWAITES
0169	TIARA
0700	TIGER
0229	TINA
1122	TINJIAN
0230	TIPPEN DELTA
1123	TMRACING
0794	TOBISHI
0394	TOMOS
1136	TOPGUY
0719	TORA
0527	TORBOT
0504	TOSELLI
0820	TOWETT
0166	TOYOTA
0694	TRACTOROEXRT
0119	TRIUMPH
1023	TRIVELSONDA
0120	TROJAN
0567	TROTAN
0254	TRUSTY
0359	TURNER
0334	TYPHOON
0913	U.M.M
0954	U N C
0445	U T B
0757	U.F.O.
0789	UBA
0991	UDARNIC
0823	UMP
1166	UNILLI
0322	UNIPOWER
0441	UNIVERSAL
1075	URAL
0863	URSUS
0382	UTOS
1054	UVM
0874	V.M.
0449	VALBATANA
0540	VALIANT
0528	VALLETTO
0506	VALMET
1102	VALTRA
0483	VANDEN
0837	VANHOOL
0278	VARIMOT
0123	VAUXHALL
0631	VAZ
0033	VELOCETTE
1011	VELOCIFERO
0462	VELOMODSQUITO
0260	VELOROBOT
0121	VELOSOLEX
0337	VENUS
0616	VERCHVIVA
0674	VERKHOVINA
0850	VERMEER
0552	VERONA
0727	VERRO
1158	VERTEMATI
0125	VESPA
0172	VIATKA
0772	VIBROMAX
0761	VICINI
0606	VICKERS
0129	VICKY
0226	VICTORIA
0294	VINCENT
1142	VINO
1162	VIPER
0535	VNDEN PRCESS
1002	VOEST
0879	VOGELE
0159	VOLGA
0124	VOLKSWAGEN
0122	VOLVO
1079	VOR
0262	VULCAN
1163	WK
0212	W S K
0714	WABCO
0442	WAKEFIELD
0827	WALLIS-STEEVENS
0301	WARCHALOWSKI
1108	WARRIOR
0227	WARTBURG
0495	WBCO HAULPCK
0413	WATHERILL
0330	WERKE
0968	WESTFIELD
0873	WESTWOOD
0725	WHELL KING
0871	WHITE
0453	WHITLOCK
0896	WIBAU
0231	WILIER
0918	WILLEME
0699	WILLIAMS
0126	WILLYS
0605	WINCHESTER
0551	WINGET
1046	WINTERSTEIGER
0898	WIRTGEN
1087	WOLF-TRIKE
0127	WOLSELEY
0975	WRANGLER
0362	WRIGLEY
1065	WULING
1149	WUZHENG
0515	WYNN PACIFIC
0555	YAK
0217	YALE
0391	YAMACUCHS
0395	YAMAHA
0786	YANMAR
1112	YAXING
1095	YILING
1114	YOUYI
1063	YUE-JIN
0979	YUHE
1154	YUTONG
0640	ZASTAVA
0659	ZAZ
1056	ZEN-NOH
1022	ZEPPA
0128	ZETOR
0193	ZETTELMEYER
1127	ZHONGYU
1143	ZHONGNEG
1168	ZHONGNENG
1127	ZHONGYU
0393	ZIL
0943	ZIM
0396	ZIP
0693	ZIRCON
1086	ZONGSHEN
0872	ZTS
0547	ZTZ
0203	ZUK
0011	ZUNDAPP

MG NSRF/A

ACCIDENT STATISTICS

Incident URN

Other ref.

1.3 ACCIDENT REFERENCE

*FATAL / SERIOUS / SLIGHT

1.9 **TIME** H H M M **DAY*** Su M T W Th F S 1.7 **DATE** D D M M 2 0 Y Y

1st Road Class & No. or (Unclassified - UC) (Not Known - NK) **1st Road Name**

Outside House No. or Name or Marker Post No. **at junction with / or** **metres** N S E W * of

2nd Road Class & No. or (Unclassified - UC) (Not Known - NK) **2nd Road Name**

Town **Sector /Beat No.**

County or Borough

Parish No. or Name 1.10 **Local Auth No. (if known)**

1.11 **Grid Reference** E → N ↑

REPORTING OFFICER **Name** **Number**

BCU/Stn 1.2 **Force** **Tel Number**

1.5	Number of vehicles

1.6	Number of casualties

1.14 ROAD TYPE	✗
Roundabout	1
One way street	2
Dual carriageway	3
Single carriageway	6
Slip road	7
Unknown	9

1.15	Speed Limit (Permanent)

1.16 JUNCTION DETAIL	✗
Not at or within 20 metres of junction	00
Roundabout	01
Mini roundabout	02
T or staggered junction	03
Slip road	05
Crossroads	06
Multiple junction	07
Using private drive or entrance	08
Other junction	09

JUNCTION ACCIDENTS ONLY

1.17 JUNCTION CONTROL	✗
Authorised person	1
Automatic traffic signal	2
Stop sign	3
Give way or uncontrolled	4

1.20a PEDESTRIAN CROSSING - HUMAN CONTROL	✗
None within 50 metres	0
Control by school crossing patrol	1
Control by other authorised person	2

1.20b PEDESTRIAN CROSSING - PHYSICAL FACILITIES	✗
No physical crossing facility within 50m	0
Zebra crossing	1
Pelican, puffin, toucan or similar non-junction pedestrian light crossing	4
Pedestrian phase at traffic signal junction	5
Footbridge or subway	7
Central refuge — no other controls	8

1.22 WEATHER	✗
Fine without high winds	1
Raining without high winds	2
Snowing without high winds	3
Fine with high winds	4
Raining with high winds	5
Snowing with high winds	6
Fog or mist — if hazard	7
Other	8
Unknown	9

1.23 ROAD SURFACE CONDITION	✗
Dry	1
Wet / Damp	2
Snow	3
Frost / Ice	4
Flood (surface water over 3cm deep)	5

1.21 LIGHT CONDITIONS	✗
Daylight: street lights present	1
Daylight: no street lighting	2
Daylight: street lighting unknown	3
Darkness: street lights present and lit	4
Darkness: street lights present but unlit	5
Darkness: no street lighting	6
Darkness: street lighting unknown	7

1.24 SPECIAL CONDITIONS AT SITE	✗
None	0
Auto traffic signal out	1
Auto traffic signal partially defective	2
Permanent road signing or marking defective or obscured	3
Roadworks	4
Road surface defective	5
Oil or diesel	6
Mud	7

1.25 CARRIAGEWAY HAZARDS	✗
None	0
Dislodged vehicle load in carriageway	1
Other object in carriageway	2
Involvement with previous accident	3
Pedestrian in carriageway - not injured	6
Any animal in carriageway (except ridden horse)	7

1.26 Did a police officer attend the scene and obtain the details for this report?	✗
Yes	1
No	2

Subject to local directions, boxes with a grey background need not be completed if already recorded

*** Circle as appropriate**

UNCLASSIFIED

MG NSRF/B

VEHICLE RECORD

Sept. 2004

2.26 VEHICLE REGISTRATION MARK

Vehicle 001	
Vehicle 002	
Vehicle 003	
Vehicle 004	

2.28 FOREIGN REGISTERED VEHICLE ✗

		VEHICLE 1	2	3	4
Not foreign registered vehicle	0				
Foreign registered vehicle LHD	1				
Foreign registered vehicle RHD	2				
Foreign reg' vehicle-two wheeler	3				

2.5 TYPE OF VEHICLE ✗

		1	2	3	4
Pedal cycle	01				
M/cycle 50cc and under	02				
M/cycle over 50cc and up to 125cc	03				
M/cycle over 125cc and up to 500cc	04				
Motorcycle over 500cc	05				
Taxi / Private hire car	08				
Car	09				
Minibus (8-16 passenger seats)	10				
Bus or coach (17 or more passenger seats)	11				
Other motor vehicle	14				
Other non-motor vehicle	15				
Ridden horse	16				
Agricultural vehicle (include diggers etc)	17				
Tram / Light rail	18				
Goods vehicle 3.5 tonnes mgw and under	19				
Goods vehicle over 3.5 tonnes mgw and under 7.5 tonnes mgw	20				
Goods vehicle 7.5 tonnes mgw and over	21				

2.6 TOWING AND ARTICULATION ✗

		1	2	3	4
No tow or articulation	0				
Articulated vehicle	1				
Double or multiple trailer	2				
Caravan	3				
Single trailer	4				
Other tow	5				

2.21 SEX OF DRIVER ✗

		1	2	3	4
Male	1				
Female	2				
Driver not traced	3				

2.22 AGE OF DRIVER (Estimate if necessary)

Vehicle 001		Vehicle 002	
Vehicle 003		Vehicle 004	

2.27 DRIVER HOME POSTCODE
or Code: 1- Unknown 2- Non UK Resident 3 - Parked & unattended

Vehicle 001		
Vehicle 002		
Vehicle 003		
Vehicle 004		

2.23 BREATH TEST ✗

		VEHICLE 1	2	3	4
Not applicable	0				
Positive	1				
Negative	2				
Not requested	3				
Refused to provide	4				
Driver not contacted at time of acc'	5				
Not provided (medical reasons)	6				

2.24 HIT AND RUN ✗

		1	2	3	4
Not hit and run	0				
Hit and run	1				
Non-stop vehicle, not hit	2				

2.29 JOURNEY PURPOSE OF DRIVER/RIDER ✗

		1	2	3	4
Journey as part of work	1				
Commuting to / from work	2				
Taking school pupil to/from school	3				
Pupil riding to / from school	4				
Other/Not known	5				

2.9 VEHICLE LOCATION AT TIME OF ACCIDENT RESTRICTED LANE/AWAY FROM MAIN C'WAY ✗

		1	2	3	4
On main carriageway not in restricted lane	00				
Tram / Light rail track	01				
Bus lane	02				
Busway (inc. guided busway)	03				
Cycle lane (on main carriageway)	04				
Cycleway or shared use footway (not part of main carriageway)	05				
On lay-by / hard shoulder	06				
Entering lay-by/ hard shoulder	07				
Leaving lay-by / hard shoulder	08				
Footway (pavement)	09				

2.10 JUNCTION LOCATION OF VEHICLE ✗

		1	2	3	4
Not at or within 20m of junction	0				
Approaching junction or waiting /parked at junction approach	1				
Cleared junction or waiting/ parked at junction exit	2				
Leaving roundabout	3				
Entering roundabout	4				
Leaving main road	5				
Entering main road	6				
Entering from slip road	7				
Mid junction– on roundabout or on main road	8				

2.7 MANOEUVRES ✗

		1	2	3	4
Reversing	01				
Parked	02				
Waiting to go ahead but held up	03				
Slowing or stopping	04				
Moving off	05				
U turn	06				
Turning left	07				
Waiting to turn left	08				
Turning right	09				
Waiting to turn right	10				
Changing lane to left	11				
Changing lane to right	12				
O'taking moving veh on its offside	13				
O'taking stationary veh on its offside	14				
Overtaking on nearside	15				
Going ahead left hand bend	16				
Going ahead right hand bend	17				
Going ahead other	18				

2.11 SKIDDING AND OVERTURNING ✗

		VEHICLE 1	2	3	4
No skidding, jack-knifing or overturning	0				
Skidded	1				
Skidded and overturned	2				
Jack-knifed	3				
Jack-knifed and overturned	4				
Overturned	5				

2.12 HIT OBJECT IN CARRIAGEWAY ✗

		1	2	3	4
None	00				
Previous accident	01				
Roadworks	02				
Parked vehicle	04				
Bridge-roof	05				
Bridge-side	06				
Bollard / Refuge	07				
Open door of vehicle	08				
Central island of roundabout	09				
Kerb	10				
Other object	11				
Any animal (except ridden horse)	12				

2.13 VEHICLE LEAVING CARRIAGEWAY ✗

		1	2	3	4
Did not leave carriageway	0				
Left carriageway nearside	1				
Left carriageway nearside and rebounded	2				
Left carriageway straight ahead at junction	3				
Left carriageway offside onto central reservation	4				
Left carriageway offside onto central reserve and rebounded	5				
Left carriageway offside and crossed central reservation	6				
Left carriageway offside	7				
Left carriageway offside and rebounded	8				

2.14 FIRST OBJECT HIT OFF CARRIAGEWAY ✗

		1	2	3	4
None	00				
Road sign / Traffic signal	01				
Lamp post	02				
Telegraph pole / Electricity pole	03				
Tree	04				
Bus stop / Bus shelter	05				
Central crash barrier	06				
Nearside or offside crash barrier	07				
Submerged in water (completely)	08				
Entered ditch	09				
Other permanent object	10				

2.16 FIRST POINT OF IMPACT ✗

		1	2	3	4
Did not impact	0				
Front	1				
Back	2				
Offside	3				
Nearside	4				

2.17 FIRST CONTACT BETWEEN EACH VEHICLE
Example: In a 3 car collision vehicle 1 collides with the rear of vehicle 2 pushing it into vehicle 3.

Example Code:			
Vehicle 001 first collides with vehicle 002	0	0	2
Vehicle 002 first collides with vehicle 001	0	0	1
Vehicle 003 first collides with vehicle 002	0	0	2

Vehicle 001	0			Vehicle 002	0		
Vehicle 003	0			Vehicle 004	0		

Subject to local directions, boxes with a grey background need not be completed if already recorded

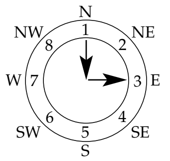
2.8 DIRECTION OF VEHICLE TRAVEL

1. Using the Example shown complete the FROM and TO boxes for the vehicles concerned, indicating direction of travel FROM and TO
2. If PARKED enter '00'

	FROM	TO
Vehicle 001		
Vehicle 002		
Vehicle 003		
Vehicle 004		

EXAMPLE

FROM	TO
1	3



CASUALTY RECORD

3.4 VEHICLE REFERENCE NUMBER
Enter VEH No. which CASUALTY occupied (for pedestrians, code vehicle that struck them) e.g. 001,002 etc.

Casualty 001	0	Casualty 002	0
Casualty 003	0	Casualty 004	0
Casualty 005	0	Casualty 006	0

3.18 CASUALTY HOME POSTCODE
or Code: 1- Unknown
2- Non UK Resident

	Postcode	Code
Casualty 001		
Casualty 002		
Casualty 003		
Casualty 004		
Casualty 005		
Casualty 006		

3.7 SEX OF CASUALTY ✗

	Code	CASUALTY 1	2	3	4	5	6
Male	1						
Female	2						

3.8 AGE OF CASUALTY (Estimate if necessary)
For children less than a year enter 00

Casualty 001		Casualty 002	
Casualty 003		Casualty 004	
Casualty 005		Casualty 006	

3.6 CASUALTY CLASS ✗

	Code	1	2	3	4	5	6
Driver/Rider	1						
Veh./pillion Passenger	2						
Pedestrian	3						

3.9 SEVERITY OF CASUALTY ✗

	Code	1	2	3	4	5	6
Fatal	1						
Serious	2						
Slight	3						

3.13 SCHOOL PUPIL CASUALTY ✗

	Code	CASUALTY 1	2	3	4	5	6
School pupil on journey to or from school	1						
Other	0						

3.15 CAR PASSENGER (not driver) ✗

	Code	1	2	3	4	5	6
Not a car passenger	0						
Front seat passenger	1						
Rear seat passenger	2						

3.16 BUS OR COACH PASSENGER ✗
(17 passenger seats or more)

	Code	1	2	3	4	5	6
Not a bus or coach passenger	0						
Boarding	1						
Alighting	2						
Standing passenger	3						
Seated passenger	4						

PEDESTRIAN CASUALTIES ONLY

3.10 PEDESTRIAN LOCATION ✗

	Code	CASUALTY 1	2	3	4	5	6
In carriageway, crossing on pedestrian crossing facility	01						
In carriageway, crossing within zig-zag lines at crossing approach	02						
In carriageway, crossing within zig-zag lines at crossing exit	03						
In carriageway, crossing elsewhere within 50m of pedestrian crossing	04						
In carriageway, crossing elsewhere	05						
On footway or verge	06						
On refuge, central island or central reservation	07						
In centre of carriageway, not on refuge, island or central reservation	08						
In carriageway, not crossing	09						
Unknown or other	10						

3.11 PEDESTRIAN MOVEMENT ✗

	Code	CASUALTY 1	2	3	4	5	6
Crossing from driver's nearside	1						
Crossing from driver's nearside-masked by parked or stationary veh'	2						
Crossing from driver's offside	3						
Crossing from driver's offside-masked by parked or stationary veh'	4						
In carriageway, stationary - not crossing (standing or playing)	5						
In carriageway, stationary -not crossing (standing or playing), masked by parked or stationary veh'	6						
Walking along in carriageway-facing traffic	7						
Walking along in carriageway-back to traffic	8						
Unknown or other	9						

3.12 PEDESTRIAN DIRECTION ✗

	Code	CASUALTY 1	2	3	4	5	6
Standing still	0						
Northbound	1						
Northeast bound	2						
Eastbound	3						
Southeast bound	4						
Southbound	5						
Southwest bound	6						
Westbound	7						
Northwest bound	8						
Unknown	9						

3.19 PEDESTRIAN INJURED IN THE COURSE OF 'On The Road' WORK
Work actively carried out on public road (e.g. delivery services, road maintenance, postal delivery, traffic control etc.) ✗

	Code	1	2	3	4	5	6
No	0						
Yes	1						
Not known	2						

LOCAL STATISTICS

Subject to local directions, boxes with a grey background need not be completed if already recorded

MG NSRF/D

CONTRIBUTORY FACTORS

Sept. 2004

1. Select up to six factors from the grid, relevant to the accident.
2. Factors may be shown in any order, but an indication must be given of whether each factor is **very likely (A)** or **possible (B).**
3. Only include factors that you consider contributed to the accident. (i.e. do NOT include "Poor road surface" unless relevant).
4. More than one factor may, if appropriate, be related to the same road user.
5. The same factor may be related to more than one road user.
6. The participant should be identified by the relevant vehicle or casualty ref no. (e.g. 001, 002 etc.), preceded by "V" if the factor applies to a vehicle, driver/rider or the road environment (e.g. V002), or "C" if the factor relates to a pedestrian or passenger casualty (e.g. C001).
7. Enter U000 if the factor relates to an uninjured pedestrian.

	Road Environment Contributed	**101** Poor or defective road surface	**102** Deposit on road (e.g. oil, mud, chippings)	**103** Slippery road (due to weather)	**104** Inadequate or masked signs or road markings	**105** Defective traffic signals	**106** Traffic calming (e.g. speed cushions, road humps, chicanes)	**107** Temporary road layout (e.g. contraflow)	**108** Road layout (e.g. bend, hill, narrow carriageway)	**109** Animal or object in carriageway	
	Vehicle Defects	**201** Tyres illegal, defective or under-inflated	**202** Defective lights or indicators	**203** Defective brakes	**204** Defective steering or suspension	**205** Defective or missing mirrors	**206** Overloaded or poorly loaded vehicle or trailer				
Driver/Rider Only (Includes Pedal Cycles and Horse Riders)	Injudicious Action	**301** Disobeyed automatic traffic signal	**302** Disobeyed 'Give Way' or 'Stop' sign or markings	**303** Disobeyed double white lines	**304** Disobeyed pedestrian crossing facility	**305** Illegal turn or direction of travel	**306** Exceeding speed limit	**307** Travelling too fast for conditions	**308** Following too close	**309** Vehicle travelling along pavement	**310** Cyclist entering road from pavement
	Driver/ Rider Error or Reaction	**401** Junction overshoot	**402** Junction restart (moving off at junction)	**403** Poor turn or manoeuvre	**404** Failed to signal or misleading signal	**405** Failed to look properly	**406** Failed to judge other person's path or speed	**407** Passing too close to cyclist, horse rider or pedestrian	**408** Sudden braking	**409** Swerved	**410** Loss of control
	Impairment or Distraction	**501** Impaired by alcohol	**502** Impaired by drugs (illicit or medicinal)	**503** Fatigue	**504** Uncorrected, defective eyesight	**505** Illness or disability, mental or physical	**506** Not displaying lights at night or in poor visibility	**507** Cyclist wearing dark clothing at night	**508** Driver using mobile phone	**509** Distraction in vehicle	**510** Distraction outside vehicle
	Behaviour or Inexperience	**601** Aggressive driving	**602** Careless, reckless or in a hurry	**603** Nervous, uncertain or panic	**604** Driving too slow for conditions or slow vehicle (e.g. tractor)	**605** Learner or inexperienced driver/rider	**606** Inexperience of driving on the left	**607** Unfamiliar with model of vehicle			
	Vision Affected by	**701** Stationary or parked vehicle(s)	**702** Vegetation	**703** Road layout (e.g. bend, winding road, hill crest)	**704** Buildings, road signs, street furniture	**705** Dazzling headlights	**706** Dazzling sun	**707** Rain, sleet, snow or fog	**708** Spray from other vehicles	**709** Visor or windscreen dirty or scratched	**710** Vehicle blind spot
	Pedestrian Only (Casualty or Uninjured)	**801** Crossing road masked by stationary or parked vehicle	**802** Failed to look properly	**803** Failed to judge vehicle's path or speed	**804** Wrong use of pedestrian crossing facility	**805** Dangerous action in carriageway (e.g. playing)	**806** Impaired by alcohol	**807** Impaired by drugs (illicit or medicinal)	**808** Careless, reckless or in a hurry	**809** Pedestrian wearing dark clothing at night	**810** Disability or illness, mental or physical
	Special Codes	**901** Stolen vehicle	**902** Vehicle in course of crime	**903** Emergency vehicle on a call	**904** Vehicle door opened or closed negligently						***999** Other – Please specify below

	1st	2nd	3rd	4th	5th	6th
Factor in the accident						
Which participant? (e.g. V001, C001, U000)						
Very likely (A) or Possible (B)						

* If 999 Other, give brief details ....

(Note: Only use if another factor contributed to the accident **and include it in the text description of how the accident occurred**)

These factors reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation

UNCLASSIFIED

APPENDIX F

CRASH DATA

F.1. CRASH DATA COLLECTED

F.2. DECODED AND TRANSATED DATA

F.1. CRASH DATA COLLECTED
FOR STASINOU-SALAMINOS AVENUE

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1	2 3		4 6	7 11
2 Λευκωσία	1 1	Τροχαία	1 2 1 1 2	0 0 1 4 8

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32 36	37–38
3 1	0 3	0 7	7	1 1	0 0	0 1	0 1	1	2	1	2	2	0 0 1 3 8	2 9

39–40: 1 2 Λευκωσία

Σαλαμίνος

41 45: | 46: 1 | 47–48: –

57: 1 Λάρνακος – Σόλωνος Μιχαηλίδη

49–51: – | 52–54: 1 0 0 | 55–56: –

58–60: 1 2 4

61 65: S 0 6 0 2 | 66 70: S 0 6 0 3 | 71: | 72–74: 0 2 0 | 75–76: 2 6 | 77–78: –

79: 1 | 80: 2 | 81: 3 | 85–87: 0 5 0 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 1

[redacted]

91: 1

92–: [redacted] | 92–97: | 98: 1

99	100 101	102	103	104 109	110 115
1	4 3	2	1	[redacted]	Δημοσία 0 8 0 3 0 5

100	102	103	104 109	110 – 115

116: 1

117: 2 4 | 119 – 124: 2 7 0 5 1 1 Καμινάκια | 125–130: 0 6 0 2 0 7 | 131–136: 3 1 0 5 0 7

117: | 119 – 124: | 125–130: | 131–136:

137: 1

[redacted]

138–139: 0 7

140–141: 0 1 8 9 Integra | 142–143: 9 5 | 140–141: | 142–143:

144–148: – 1 5 9 0 | 149–155: [redacted] | 144–148: | 149–155: | 156–157: –

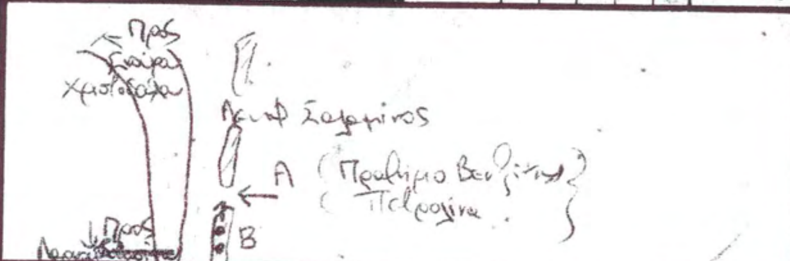
158–159: 0 6 | ΟΧ 1 | 158–159:

160–161: 0 1 | 162–163: – | 160–161:

ΟΧ 2

164: 1 | 164:

165: 1 | 165:



Το αυτοκίνητο Α εξερχόμενο από το υπό ... πρατήριο βενζίνης κτύπησε ... Β που διέσχιζε το δρόμο από τα αριστερά προς τα δεξιά του αυτοκινήτου (Μπροστά του).

166–167: 0 1 | ΟΧ 1 | 168–169: – | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	0 1	2	1	1	4 3	2	–	5	1 7	4	–	3	[redacted]
2	0	~~0 0~~	~~0~~	0	3	6 2	2	–	5	0 1	2	6	1	[redacted]
3														
4														
5														
6														
7														

186 187 – 190: Γ Α Α 0 8 1 4

ΥΠΟΓΡΑΦΗ

31/03/07

191–194: 1 7 3 0

199–202:

207–210:

211

195 – 198:

203–206:

212–215:

1426

4/4/07

1 | 1 | 1

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

2 3

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1 — ΠΙΤΙΑ — 1 1 — ΤΡΟΧΑΙΑ — 4: 2 1 1 2 6 — 7 00293 11 — T

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32—36	37—38
05	06	07	7	09	45	02	01	1	1	2	2	2	00250	30

39—40: +

ΠΙΤΙΑ

ΣΑΛΑΜΙΝΟΣ

ΑΙΓΑΙΟΥ

41—45:

46: 1

47—48: +

57: 1

49—51: - - - 52—54: 0 1 2

55—56: +

58—60: 1 4 0

61—65: 5 0 5 1 7

66—70: 5 0 6 0 4

71:

72—74: 2 0

75—76: 0 1

77—78: +

79: 8 — 80: 2 — 81: 1

82: 1 — 83: 1 — 84: 1

85—87: 0 5 0

88: 2

89: 2

90: 1

1

91

[redacted]

92—97 [redacted]

99–100	101	102	103	104–109	110—115
1 7	2	1	2	1 [redacted]	2 9 1 2 0 8

116: 1

117: 5 0 OLYMPIC

119—124: 0 0 1 9 0 3

125—130: 0 7 0 8 0 6

131—136: 6 0 8 0 7

137: 1

ΠΑΙΔΟΣ

Η ΙΔΙΑ.

140—141: 0 4 5 [redacted]

142—143: 6 8 — 19

144—148: - - 5 0 0

149—155: - [redacted]

[redacted]

92—97: 1 1 7 4 2 4

98: 1

100	102	103	104–109	110—115
6 9	1			

117

119—124

125—130

131—136

138—139: 0 6

140—141

142—143

144—148

149—155

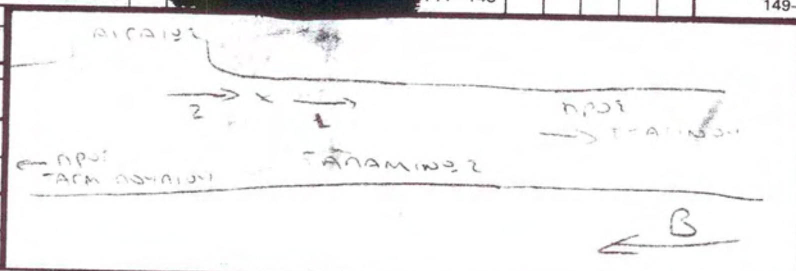
156—157: +

158—159: 0 6

160—161: 0 1

164: 1

165: 1



158—159: 0 1

ΟΧ 1

162—163: +

160—161: 0 5

ΟΧ 2

164: /

165: /

Το όχημα αρ. 2 κτυπούσε από πίσω το όχημα αρ. 1

166—167: 0 1

ΟΧ 1

168—169: 0 1

ΟΧ 2

ΠΡΟ-ΣΩΠ	170	171—172	173	174	175	176—177	178	179	180	181—2	183	184	185	
1	1	0 1	2	1	1	7 3	1	-	5	1 7	4	-	3	[redacted]
2	2	0 1	1	3	1	6 9	1	-	5	0 2	2	1	1	
3														
4														
5														
6														
7														

186: Α — 187—190: Α 2 5 5 1

ΥΠΟΓΡΑΦΗ

191—194: 0 2 5 0

199—202: 0 3 1 0

207—210: 2 0

211: 9

195—198

203—206

212—215

25/6/07

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — **ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ**

1 | 1 | 1

2 — Λευκωσία — 2: 1 — 3: 1 — Στρόβολος — 4: 21 — 6: 2 — 7–11: 00319 — 1

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
08	06	07	6	19	00	07	02	1	1	2	2	2	00244	19

39–40: –

Λευκωσία

Λεωφ. Στασίνου

Λεωφ. [illegible] — Στ. Μακαρίου Β'

41–45: | 46: 2 | 47–48: – | 49–51: | 52–54: | 55–56: –

57: 6

58–60: 035

61–65: R0703 | 66–70: | 71: | 72–74: 030 | 75–76: 08 | 77–78: –

79: 1 | 80: 2 | 81: 2 | 82: 1 | 83: 1 | 84: 1 | 85–87: 050 | 88: 2 | 89: 2

90: 3

1

91

[redacted]

92– [redacted]

92–9 [redacted]

98

	100	101	102	103	104	109	110–115
Όχημα Α	3	8	2	2	[redacted]		240434
Όχημα Β	30		1	3	– – – – – –		– – – – – –

116: 1

	117	119–124	125–130	131–136
Όχημα Α	22	474407		
Όχημα Β	– –	– – – – – –		

137: 1 | 138–139: 04

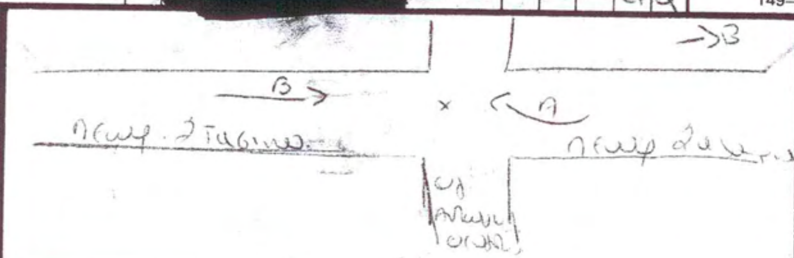
[redacted]

	140–141	142–143	144–148	149–155
Όχημα Α	02 [redacted]	2 [redacted] 00	– 1 3 2 0	– [redacted]
Όχημα Β	01 70	[redacted] 79	– – – 4 2	[redacted]

156–157: –

	158–159	160–161	164	165
ΟΧ 1	06	07	1	1
ΟΧ 2	02	01	2	1

162–163: –



Το όχημα Α έκανε στροφή δεξιά και συγκρούστηκε με το όχημα Β το οποίο κινείτο με ίδια πορεία.

166–167: 02 (ΟΧ 1) | 168–169: 01 (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176-177	178	179	180	181–2	183	184	185
1	1	01	2	1	3	38	2	–	5	17	4	–	3
2	1	03	2	1	3	19	2	–	5	18	3	6	1
3	2	01	4	9	3	30	1	–	5	04	2	1	1
4													
5													
6													
7													

[redacted]

186: AA | 187–190: 1612

ΥΠΟΓΡΑΦΗ

191–194: 1905 | 195–198: 1905

199–202: 1920 | 203–206: 1915

207–210: 15 | 211: 2 | 212–215: 10

2/7/07.

1 | 1 | 1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

2 ΛΕΥΚΩΣΙΑ | 1 1 | ΤΡΟΧΑΙΑ | 4: 2 1 1 | 6: 2 | 7–11: 00345 | Τ

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32—36	37—38
07	07	07	7	18	00	02	01	1	1	2	2	2	00307	19

39—40: +

ΛΕΥΚΩΣΙΑ

Διασταύρωση Λεωφ. Σταδίου - Ταλαμίνης

41 — 45 | 46: 1 | 47—48: 25

49 — 51 | 52 — 54 | 55—56: +

57: 6

58—60: 140

61—65	66—70	71	72—74	75—76	77—78
S0602			047	25	+

79	80	81	82	83	84	85 — 87	88	89
1	2	1	1	1	1	050	2	2

90: 1

1

[redacted]

91

92—97	98
[redacted]	[redacted]

	100	101	102	103	104—109	110 — 115	125—130	131—136
Όχημα 1	4	5	1	2	[redacted]	080232	090307	090308
Όχημα 2	2	6	1	2	[redacted]	170351	260207	250208

	116	117	119 — 124
Όχημα 1	1	ΥΑΡΟ 50	052113
Όχημα 2		22	030982

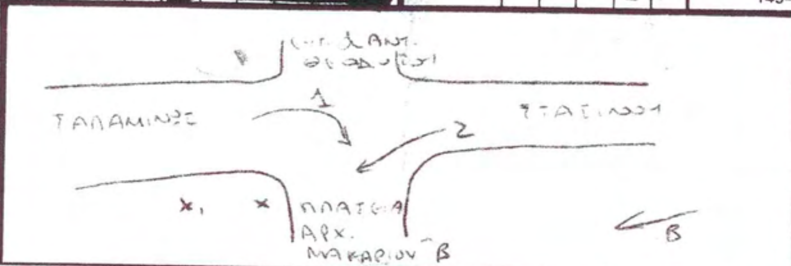
137: 1 | ΙΔΙΟΣ | ΙΔΙΟΣ | 138—139: 26

	140—141	142—143	144—148	149—155
Όχημα 1	0166	ΙΡ 94	1760	[redacted]
Όχημα 2	2077	ΙΡ 95	2295	[redacted]

156—157: 27

	158—159	160—161	164	165
Όχημα 1	06	11	1	1
Όχημα 2	06	01	1	1

162—163: 15



Το όχημα αρ. 1 στην προσπάθεια του να στρίψει δεξιά προσέκρουσε το όχημα αρ. 2 το οποίο ερχόταν από απέναντι με αποτέλεσμα να κινηθεί προς τα αριστερά για να το αποφύγει και βρήκε στο απέναντι πεζοδρόμιο κτυπώντας αρχικά σε ταμπέλα (x) και σε δέντρο (x1)

166—167: 02 (ΟΧ 1) | 168—169: 01 (ΟΧ 2)

ΠΡΟΣΩΠ	170	171—172	173	174	175	176-177	178	179	180	181—2	183	184	185	
1	1	01	2	1	1	45	1	—	5	17	4	—	3	[redacted]
2	2	01	2	1	1	26	1	—	5	17	2	1	1	
3														
4														
5														
6														
7														

186: Α | 187 — 190: Α2551

ΥΠΟΓΡΑΦΗ

191 — 194: 1805 | 199—202: 1825 | 207—210: 20 | 211: 9

195 — 198 | 203—206 | 212—215

1/1/07

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 2 | 1/610 | 2 3: 1 1 | Τευχοιο | 4–6: 2 1 2 | 7–11: 00352

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
09	07	07	2	22	25	02	01	1	1	2	2	2	00314	22

39–40: 1

λεωφ. ωδίου
λεωφ. Σταδινου
Λεναλδας

41–45 | 46: 1 | 47–48

49–51 | 52–54 | 55–56

57: 1

58–60: 160

61–65: P0701 | 66–70 | 71

72–74: 025 | 75–76: 05 | 77–78

79: 2 | 80: 2 | 81: 1 | 85–87: 050 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 1, 4

[redacted]

91

[redacted]

	100	101	102	103	109	110–115
Όχημα 1	2	6	1	1	[redacted]	180208
Όχημα 2	4	3	1	2	[redacted]	180634

98 | 92 [redacted]

116: 1 | 137: 1

	117	119–124	125–130	131–136
Όχημα 1	22	097406	050307	040907
Όχημα 2	10	385177	260607	251007

138–139: 02

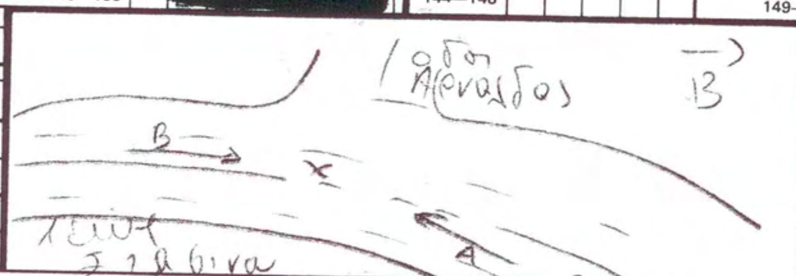
ιδιος / ιδια | ιδιος / ιδια

	140–141		142–143	144–148	149–155
Όχημα 1	95	M/C	95	748	[redacted]
Όχημα 2	66	Saloon	98		[redacted]

156–157

	158–159	160–161	164	165
ΟΧ 1	03	01	1	1
ΟΧ 2	06	04	1	1

162–163



Η M/C A εισηλθε στο αντιθετο ρευμα και κτυπησε στο οχημ. B

166–167: 01 (ΟΧ 1) | 168–169: 01 (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	4	2	3	26	1	–	5	06	2	1	1	[redacted]
2	2	01	2	1	3	43	1	–	5	17	4	–	3	[redacted]
3														
4														
5														
6														
7														

ΥΠΟΓΡΑΦΗ

186: ΑΑ | 187–190: 0843 | Α843

191–194: 2230 | 199–202: 2250 | 207–210: 20 | 211: 9

195–198: 2225 | 203–206: 2235 | 212–215: 10

19/7/07

1 ... 1 | 1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

2 ΛΕΥΚΩΣΙΑΣ ΒΙ ΤΡΟΥΛΛΙΑ 4 2 1 6 2 7 00398 11 7

12–13 14–15 16–17 1 2 0 7 0 7 18 5 19–20 21–22 23–24 25–26 1 2 5 0 0 2 0 1 27 1 28 1 29 2 30 2 31 2 32 00318 36 37–38 1 9

39–40 7 ΛΕΥΚΩΣΙΑΣ

ΛΕΩΦ. ΣΤΑΣΙΝΟΥ 41 45 46 1 47–48 ~~2~~ 9

ΛΕΩΦ ΜΠΟΥΜΠΟΥΛΙΝΑΣ ~~ΛΕΩΦ ΣΤΑΣΙΝΟΥ~~

49 – 51 52 – 54 55–56 - - - - - -

57 6

58–60 120

61 Q0703 65 66 70 71

72–74 071 75–76 17 77–78

79 1 80 3 81 8 85 – 87 050 88 2 89 2

82 1 83 1 84 1

90 1 [redacted]

1 91

92–9 [redacted] 92–9 [redacted] 98

99 100 101 5 1 102 1 103 2 104 [redacted] 109 110 – 115 1 1 0 7 2 6 100 5 2 102 1 103 1 104 [redacted] 109 110 – 115 0 3 1 1 0 7

116 1 117 10 119 – 124 718339 125–130 030407 74 1 2 0 6 0 1 124 125–130 [redacted]

137 1 131–136 020408 99 999999 131–136 [redacted] 138–139 07

[redacted]

140–141 60 [redacted] 142–143 2003 140–141 70 [redacted] 142–143 99

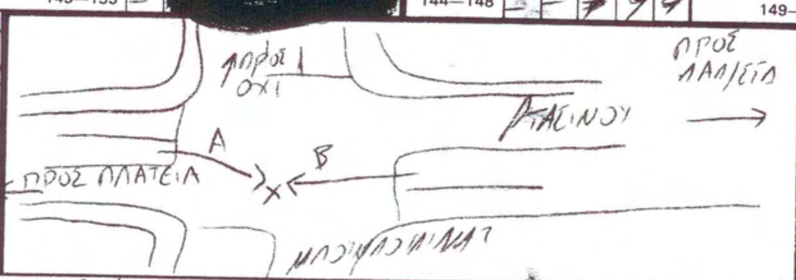
144–148 - 1 9 9 4 149–155 - [redacted] 144–148 - - 7 9 9 149–155 [redacted] 156–157 -

158–159 06 158–159 03 ΟΧ 1

160–161 04 160–161 01 162–163 -

164 1 164 9 ΟΧ 2

165 1 165 1



Ο Α ΕΚΚΙΝΗΣΕ ΜΕ ΚΛΙΣΗ ΔΕΞΙΑ ΚΑΙ ΑΝΕΚΟΨΕ ΤΗΝ ΠΟΡΕΙΑ ΤΟΥ Β.

166–167 07 ΟΧ 1

168–169 01 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	51	1	-	5	17	4	-	3	[redacted]
2	2	01	4	2	1	52	1	-	5	06	2	1	1	[redacted]
3														
4														
5														
6														
7														

186 Α 187 – 190 Α 2671 191 – 194 1255 195 – 198

199–202 1310 203–206

ΥΠΟΓΡΑΦΗ 207–210 15 9 211 212–215 ΑΣΤ 4731 5/8/07

1 | 1 | 1 | ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ | 2 3 | ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ | 4 | 6 | 7 | 11

2 ΛΙΣΙΑ | 1 1 | ΤΡΟΧΑΙΑ | 2 1 1 2 | 00369

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32—36	37—38
25	07	07	6	11	45	01	01	1	1	2	2	2	00349	40

39—40: 03 — ΛΙΣΙΑ / ΣΤΑΣΙΝΟΥ | 41—45 | 46: 1 | 47—48: 4

57: 1 — ΠΛΑΤΕΙΑ ΕΛΕΥΘΕΡΙΑΣ ΣΑΛΑΜΙΝΟΣ | 49—51: - - - | 52—54: - 3 3 | 55—56: 4

58—60: 14.0

61—65	66—70	71	72—74	75—76	77—78
P0702	P0701		03.0	27	

79: 8 | 80: 2 | 81: 1 | 85—87: 050 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 1

[redacted]

91: 1 | 92—97: [redacted] | 98 | 92—97: [redacted]

99	100	101	102	103	104—109	110—115
1	2	5	1	2	[redacted]	100816

100: 52 | 102: 1 | 103 | 104 | 109 | 110—115

116: 1 | 117: 04 | 119—124: 055859 | 125—130: 230806 | 131—136: 230807 | 117 | 119—124 | 125—130 | 131—136

137: 1

[redacted]

138—139: 07

140—141: 33 | [redacted] | 142—143: 02 | 140—141 | 142—143

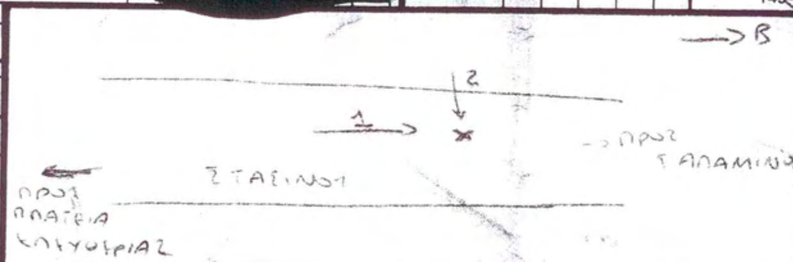
144—148: 1343 | 149—155: [redacted] | 144—148 | 149—155 | 156—157: — | ΟΧ 1

158—159: 06 | 158—159 | 162—163: — | ΟΧ 2

160—161: 08 | 160—161

164: 1 | 164

165: 1 | 165



Το όχημα αρ. 1 κινείτο σε κύριο δρόμο και κτύπησε το πεζό αρ. 2 ο οποίος διασταύρωνε εκτός διαβάσεως πεζών.

166—167: 01 | ΟΧ 1 | 168—169: — | ΟΧ 2

ΠΡΟΣΩΠ	170	171—172	173	174	175	176—177	178	179	180	181—2	183	184	185	
1	1	01	2	1	3	25	2	-	5	17	4	-	3	[redacted]
2	0	00	0	0	1	52	1	-	5	01	2	1	1	[redacted]
3														
4														
5														
6														
7														

186 | 187—190: A A 2 5 5 1 | 191—194: 1150 | 195—198

199—202: 1200 | 203—206

ΥΠΟΓΡΑΦΗ | 207—210: 10 | 211: 9 | 212—215

Α Τυχ.
29/7/07

1 | 1 | 1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ 4 6 7 11

2 ΛΕΥΚΩΣΙΑ | 11 | ΤΡΟΧΑΙΑ | 21 02 | 00426 | 7

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32 36	37—38
08	08	07	4	16	30	02	01	2	2	2	2	2	~~0~~0387	12

39—40 ΛΕΥΚΩΣΙΑ

ΛΕΩΦ ΣΑΛΑΜΙΝΟΣ

41 45 | 46 1 | 47—48 —

57 ΛΕΩΦ ΛΑΡΝΑΚΟΣ ΟΔΟΣ ΡΟΙΚΟΥ

1

49 — 51 | 52 — 54 ~~200~~ | 55—56

58—60 ~~0~~ 6 4

61 65 R0701 | 66 70 ~~R0702~~ | 71 | 72—74 014 | 75—76 25 | 77—78 —

79	2	80	2	81	3	85 — 87	050	88	2	89	2
82	1	83	1	84	1						

90

1 [redacted]

1 [redacted]

91 [redacted] 92—97 [redacted] | 98 [redacted]

99	100 101	102	103	104	109	110 — 115
1	80	1	2	[redacted]		100608

100	102	103	104	109	110 — 115
23	2	2	[redacted]		290354

116 117	119 — 124	125—130	131—136
24	131068	020906	010807

117	119 — 124	125—130	131—136
22	149286	190407	180307

137

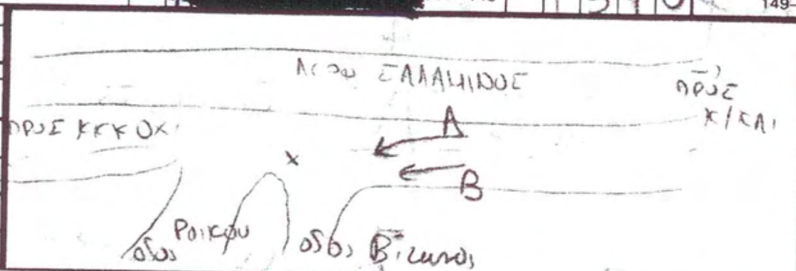
1 Ο ΙΔΙΟΣ | Η ΙΔΙΑ | 138—139 04

Η ΙΔΙΑ | Η ΙΔΙΑ

140—141 95 [redacted] 142—143 91 | 140—141 24 GOLF 142—143 04

144—148 ———4a | 149—155 [redacted] | 144—148 —1390 | 149—155 [redacted] | 156—157

158—159	02
160—161	07
164	1
165	1



ΟΧ 1

158—159	06
160—161	03
162—163	—

ΟΧ 2

164	1
165	1

Το όχημα Α κινείτο στη δεξιά λωρίδα κυκλοφορίας της Λεωφ Σαλαμίνος με κατεύθυνση προς ΚΚΚΟΧ. Στο ύψος της συμβολής με την οδό Βιζυηνού άλλαξε λωρίδα και κτύπησε το όχημα Β.

166—167 14 ΟΧ 1

168—169 01 ΟΧ 2

ΠΡΟΣΩΠ	170	171—172	173	174	175	176-177	178	179	180	181—2	183	184	185	
1	1	01	4	2	1	80	1	—	8	04	2	1	1	[redacted]
2	2	01	2	1	1	23	2	—	1	07	4	—	3	
3														
4														
5														
6														
7														

186 187 — 190 AA 4028

ΥΠΟΓΡΑΦΗ Μ... Αλιώτης

191 — 194	1640
199—202	1650
207—210	10

9 211

195 — 198	1631
203—206	1639
212—215	8

Δ/ΛΤ 10/7/..

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1	2 3		4–6	7–11
ΛΕΥΚΩΣΙΑ	1 1	ΤΡΟΧΑΙΑ	2 1 1 2	00687

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
05	12	07	4	13	05	02	01	1	1	2	2	2	00657	30

40: ΛΕΥΚΩΣΙΑΣ

ΛΕΩΦΟΡΟΣ ΣΤΑΣΙΝΟΥ

41–45	46	47–48
	1	

57: ΠΛΑΤΕΙΑ ΕΛΕΥΘΕΡΙΑΣ ΟΔΟΣ ΑΡΝΑΛΔΑΣ

49–51	52–54	55–56
- - -	2 1 2	

58–60: 1 3:2

61–65	66–70	71	72–74	75–76	77–78
P0702	P0701		02.5	01	

79	80	81	82	83	84	85–87	88	89
8	2	3	1	1	1	050	2	2

90: [redacted]

91: 92–97 [redacted] 98

	100	101	102	103	104–109	110–115	117	119–124	125–130	131–136
Όχημα 1	2	3	2	2	[redacted]	220454	18	470128	276707	190708
Όχημα 2	2	3	1	2	[redacted]	211154	12	853507	280907	278908

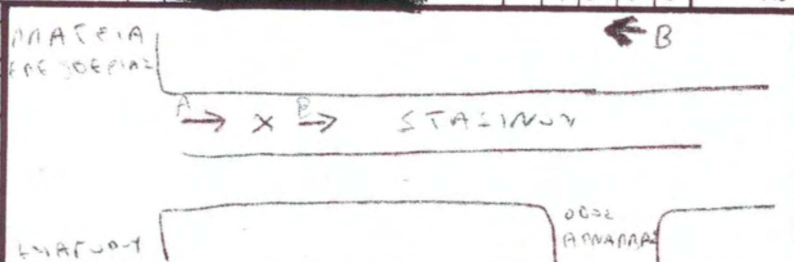
137: 2 [redacted]

138–139: 01

	140–141	142–143	144–148	149–155	158–159	160–161	164	165
Όχημα 1	86	99	- - 990	[redacted]	06	01	1	1
Όχημα 2	24	07	- 1598	- [redacted]	06	05	1	1

156–157 ΟΧ 1

162–163 ΟΧ 2



Το αυτ/ο Α κτύπησε στο πίσω μέρος του Β το οποίο σταμάτησε λόγω τροχαίας κίνησης.

166–167: 01 ΟΧ 1

168–169: 01 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	23	2	-	5	17	4	-	3	[redacted]
2	2	01	2	1	1	23	1	-	5	17	4	-	3	[redacted]
3	2	03	2	1	1	57	2	-	5	13	2	6	2	[redacted]
4														
5														
6														
7														

186 187–190	191–194	199–202	207–210	211	195–198	203–206	212–215
AA 2981	1730	1800	30	0	- - - -	- - - -	- - - -

5/12/07

9/12/07

ΥΠΟΓΡΑΦΗ

25/12/07

1 | 1 | 1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ | 2 3 | ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ | 4 6 | 7 11

2 ΛΕΥΚΩΣΙΑ | 11 | 2112. | 2 1 1 2 | 0 0 0 4 6 | T

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
24	01	08	5	09	25	01	01	1	1	2	1	2	00025	40

39–40 ΛΕΥΚΩΣΙΑ

14 ΛΕΩΦ. ΣΤΑΣΙΝΟΥ

41–45	46	47–48
	1	- -

ΟΜΗΡΟΥ ΕΥΑΓΟΡΟΥ.

57 ΦΩΤΑ ΠΛΑΤΕΙΑΣ ΕΛΕΥΘΕΡΙΑΣ

6

49–51	52–54	55–56	58–60
	005	- -	01.4

61–65	66–70	71	72–74	75–76	77–78
P0704	P0705		00.2	27	- -

79	80	81	82	83	84	85–87	88	89
8	2	3	1	1	1	050	2	2.

90

3 [redacted]

1 [redacted]

91 [redacted]

92–97 [redacted]

98 1

99	100	101	102	103	104–109	110–115
1	6	0	1	2	[redacted]	160309

116

117	119–124	125–130	131–136
32.	016413	110108	100408

137 1

138–139 07

[redacted]

140–141 07 | [redacted] | 142–143 87

140–141 | 142–143

144–148	149–155
-2497	[redacted]

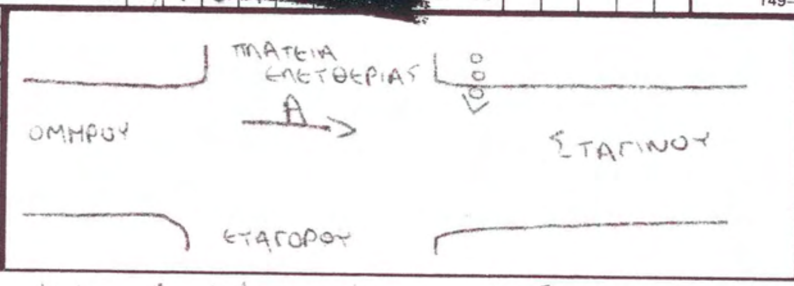
144–148 | 149–155 | 156–157 - -

158–159 04

160–161 08

164 1

165 1



ΟΧ 1 | 158–159 | 162–163 | 160–161 | ΟΧ 2 | 164 | 165

Το όχημα A πού κινείτο στη Στασίνου από Πλατεία Ελευθερίας προς Πάφου [illegible] με τις [illegible] [redacted]

[illegible] διασταύρωσε από τα φώτα προς [illegible] [illegible] τα ωφελής [illegible]

166–167 01

ΟΧ 1 | 168–169 1 | ΟΧ 2

ΠΡΟ-ΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	60	1	–	1	13	4	–	3	[redacted]
2	0	00	0	0	1	70	2	–	1	01	2	1	1	[redacted]
3														
4														
5														
6														
7														

186	187–190	191–194	195–198
A	A 1865	0930	0930

199–202	203–206	207–210	211	212–215
0935	0935	5	2	5

ΥΠΟΓΡΑΦΗ [signature]

[signature] 7/2/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1	2 3	4 – 6	7 – 11
1 1	1 1	2 1 1 2	00135

Λ/ΣΙΑΣ — ΤΡΟΧΑΙΑ

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
25	03	08	3	16	20	01	03	1	1	2	2	2	00110	29

39–40: –

Λ/ΣΙΑ

ΛΕΩΦ. ΣΤΑΣΙΝΟΥ

41–45	46	47–48
	1	– –

57: 1

ΑΡΝΑΛΔΑΣ — ΠΛΑΤΕΙΑ ΕΛΕΥΘΕΡΙΑΣ Λ/ΣΙΑ ΤΡΟΧΑΙΑ

49–51	52–54	55–56	58–60
– – –	1 0 0	– –	1 4 0

61–65	66–70	71	72–74	75–76	77–78
80705	80704		020	22	– –

79	80	81	82	83	84	85–87	88	89
8	2	3	1	1	1	050	2	2

90: 1

1 [redacted]

91

92–97 [redacted]

92–97 98: 2

100	101	102	103	104–109	110–115
4	17	2	3	– – – – – –	– – – – – –

116: 1

117	119–124	125–130	131–136
– –	– – – – – –	– – – – – –	– – – – – –

137: 1

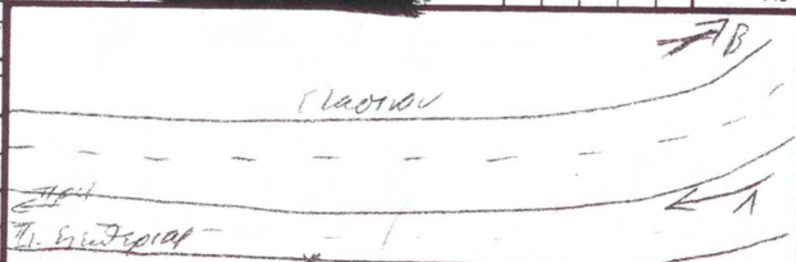
[redacted]

138–139: 22

140–141	142–143	144–148	149–155
53 3 [redacted]	2 0 3	– 1 3 4 3	[redacted]

156–157
– –

158–159	160–161	164	165
06	08	1	1



ΟΧ 1 162–163: – –
ΟΧ 2

Το αυτοκίνητο Α κινείτο στη λεωφ. Στασίνου στη Λ/σία. Σε κάποιο σημείο του δρόμου παρεξέκλινε της πορείας του προς τα αριστερά με αποτέλεσμα να κτυπήσει σε περίφραξη εργοταξίου

166–167: 0 1 (ΟΧ 1)
168–169: – – (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	3	17	2	–	1	17	3	1	1	[redacted]
2	1	03	2	1	3	18	2	–	5	18	2	1	1	
3	1	04	2	1	3	19	2	–	5	18	3	1	1	
4														
5														
6														
7														

186	187–190	191–194	195–198
AA	2407	1625	1625

199–202	203–206	207–210	211	212–215
1645	1640	20	2	15

ΥΠΟΓΡΑΦΗ AA2407

3/3/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 1 1 | 2 3

2: Λ/ΣΙΑ 1 1 | ΤΡΟΧΑΙΑ | 4–6: 2 1 1 2 | 7–11: 00376 | T

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
05	07	08	7	11	30	02	02	1	1	2	1	2	00299	22

39–40: +

Λ/ΣΙΑ

ΣΤΑΣΙΝΟΥ

41–45: | 46: 1 | 47–48: 2

ΑΓ. ΕΛΕΝΗΣ

57: 3 | 49–51 — 52–54: + | 55–56: +

58–60: 1 3 : 2

61–65: Q0729 | 66–70: | 71: | 72–74: 02.5 | 75–76: 08 | 77–78: +

79: 2 | 80: 2 | 81: 1 | 82: 1 | 83: 1 | 84: 1 | 85–87: 050 | 88: 2 | 89: 2

90: 1

1 [redacted]

91 [redacted]

92–97 [redacted] 98

	Όχημα 1	Όχημα 2
99	1	
100–101	34	28
102	1	1
103	1	1
104–109	1 [redacted]	1 [redacted]
110–115	100709	140708
116	1 OLYMPIC	
117	50	10
119–124	062145	225467
125–130	010807	270608
131–136	310708	260609

137: 1 [redacted]

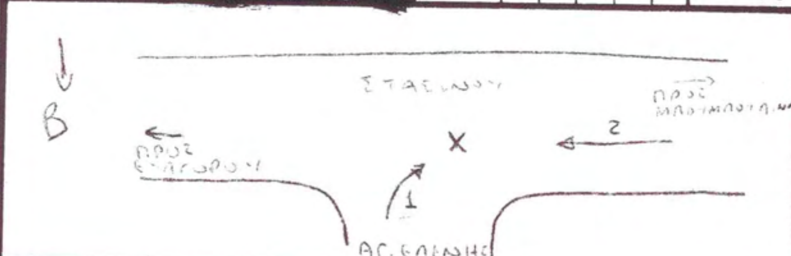
ΙΔΙΟΣ

ΙΔΙΑ

138–139: 04

	Όχημα 1	Όχημα 2
140–141	70 A/CYCLE	70 [redacted]
142–143	96	07
144–148	- - - 49	- - 385
149–155	[redacted]	- [redacted]
158–159	02	03
160–161	03	01
164	1	1
165	1	1

156–157: + | ΟΧ 1 | 162–163: + | ΟΧ 2



Το όχημα αρ. 1 εξήλθε από πάροδο εις κύριο δρόμο και συγκρούστηκε με το όχημα αρ. 2 το οποίο κινείτο στον κύριο δρόμο.

166–167: 02 ΟΧ 1 | 168–169: 01 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	4	3	1	34	1	-	5	04	3	1	1	[redacted]
2	2	01	4	3	1	28	1	-	5	06	2	1	1	[redacted]
3														
4														
5														
6														
7														

186: A | 187–190: A 2 5 5 1

191–194: 1135 | 195–198:

199–202: 1145 | 203–206:

207–210: 10 | 211: 0 | 212–215:

ΥΠΟΓΡΑΦΗ

ΜΕ13

2.8.08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

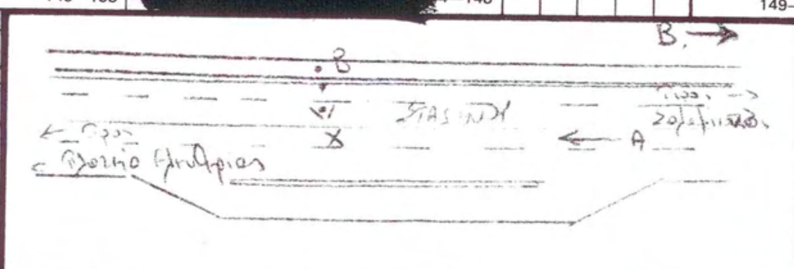
Field	Entry
1	1 1
2	2 ΛΕΥΚΩΣΙΑ
2 3	1 1 ΤΡΟΧΑΙΑ
4 – 6	2 1 1 2
7 – 11	00454
12–13, 14–15, 16–17	04 09 08
18	5
19–20, 21–22	20 15
23–24	01
25–26	01
27	1
28	1
29	2
30	1
31	2
32 – 36	00408
37–38	29
39–40	12 ΛΕΥΚΩΣΙΑ
	ΣΤΑΣΙΝΟΥ
	ΑΝΔΡΟΚΛΕΟΥΣ
41 – 45	
46	1
47–48	+
49 – 51	
52 – 54	020
55–56	+
57	1 TRAVEL EXPRESS
58–60	130
61 – 65	R0715
66 – 70	R0714
71	
72–74	020
75–76	28
77–78	+
79	8
80	2
81	3
82	1
83	1
84	1
85 – 87	050
88	2
89	2

Vehicle A

Field	Entry
90	1
	4
91	[redacted]
92–97	
98	1
99	1
100 101	1 2
102	2
103	2
104 – 109	[redacted]
110 – 115	110159
116	1
117	50
119 – 124	026735
125–130	231007
131–136	231003
137	1 ΙΔΙΟΣ
	ΙΔΙΑ
138–139	07
140–141	0533 [redacted]
142–143	1992
144–148	-1228
149–155	[redacted]
156–157	+
158–159	06
160–161	01
162–163	+
164	1
165	1

Vehicle B

Field	Entry
100	
102	
103	
104 – 109	
110 – 115	
117	
119 – 124	
125–130	
131–136	
140–141	
142–143	
144–148	
149–155	
158–159	
160–161	
164	
165	



Το όχημα Α [illegible]

Field	Entry
166–167	01
ΟΧ 1	
168–169	+
ΟΧ 2	

ΠΡΟΣΩΠ	170	171–172	173	174	175	176-177	178	179	180	181—2	183	184	185	
1	1	01	2	1	1	12	1	-	1	12	4	-	3	[redacted]
2	0	00	0	0	3	33	1	-	5	01	2	1	1	
3														
4														
5														
6														
7														

Field	Entry
186 187 – 190	A A 2 5 2 0
191 – 194	2 0 2 0
195 – 198	2 0 0 0
199–202	2 0 2 5
203–206	2 0 2 5
207–210	5
211	2
212–215	5

ΥΠΟΓΡΑΦΗ [signature] ΑΑ 2520

[signature] ΑΣΤΥΦ 1231

18/9/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Πεδίο	Τιμή
1	2 Λευκωσίας
2	1
3	1 Τροχαία
4	2 1 1
6	2
7–11	00604 7
12–13	03
14–15	12
16–17	08
18	4
19–20	08
21–22	15
23–24	01
25–26	01
27	2
28	1
29	1
30	1
31	1
32–36	00556
37–38	20
39–40	11
41–45	
46	1
47–48	–
49–51	–
52–54	–
55–56	–
57	1
58–60	075
61–65	Q0733
66–70	
71	
72–74	020
75–76	28
77–78	–
79	2
80	2
81	1
82	1
83	1
84	1
85–87	050
88	2
89	2

Λευκωσία
Λεωφόρος Σταδίου
Κρήτης

90 1

[redacted]

91 1

92–97

98 1

99	100	101	102	103	104–109	110–115
1	2	1	1	3		

116 1

117 – 119–124 125–130 131–136

137 1

[redacted]

138–139 07

140–141 01[illegible] [redacted]

142–143 96

144–148 –1990

149–155 – [redacted]

144–148 149–155 156–157 –

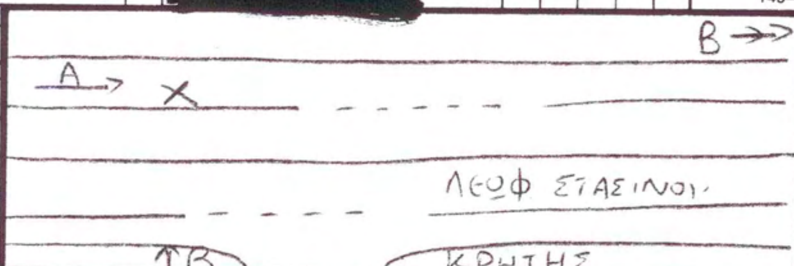
158–159 06

160–161 01

164 2

165 2

162–163 –



166–167 01

Το αυτοκίνητο Α παρέσυρε & τραυμάτισε τον πεζή Β σοβαρά η οποία διασταύρωνε το δρόμο από τα δεξιά προς τα αριστερά ως η πορεία του Α.

168–169 –

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	3	20	1	–	1	17	4	–	3	[redacted]
2	0	00	0	0	1	73	2	–	1	01	2	1	1	[redacted]
3														
4														
5														
6														
7														

Πεδίο	Τιμή
186	Α
187–190	Α0037
191–194	0820
199–202	0830
207–210	10
211	9
195–198	0820
203–206	0825
212–215	5

ΥΠΟΓΡΑΦΗ 37

Α/Αστ 71Χ
5/12/08.

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: Λευκωσίας | 2 3: 1 1 | Τροχαίο | 4–6: 2 1 1 2 | 7–11: 0 0 6 1 5

12–13: 17 | 14–15: 12 | 16–17: 08 | 18: 4 | 19–20: 20 | 21–22: 45 | 23–24: 01 | 25–26: 02 | 27: 2 | 28: 1 | 29: 2 | 30: 1 | 31: 2 | 32–36: 0 0 5 9 2 | 37–38: 40

39–40: 02 | Λευκωσίας | Δαλαμινος | 41–45 | 46: 1 | 47–48: –

/ /

57: 1 | Λήμος | Β. Μιχαηλίδη | Πρατήριο Πετρολίνα | 49–51: – – – | 52–54: 045 | 55–56: –

58–60: 1 4 2

61–65: 5 0 6 0 8 | 66–70: 5 0 6 0 7 | 71 | 72–74: 0 2 5 | 75–76: 27 | 77–78: –

79: 3 | 80: 2 | 81: 3 | 85–87: 050 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 1 | 4 | [redacted]

91 | 92–97 | 98: 1

100: 4 | 101: 23 | 102: 1 | 103: 2 | 104–109: [redacted] | 110–115: 3 1 1 2 4 9

100 | 102 | 103 | 104 | 109 | 110–115

116: 1 | 117: 10 | 119–124: 1 9 4 7 2 2 | 125–130: 0 8 0 3 0 8 | 131–136: 0 7 0 3 0 9

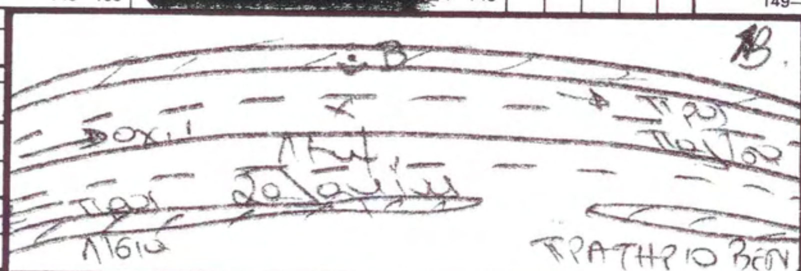
117 | 119–124 | 125–130 | 131–136

137: 1 | Ίδιος | Ίδια | 138–139: 07

140–141: 02 | [redacted] | 142–143: 99 | 140–141 | 142–143

144–148: / 1 3 0 8 | 149–155: [redacted] | 144–148 | 149–155 | 156–157: /

158–159: 06 | 160–161: 01 | 164: 1 | 165: 1



158–159 | 160–161 | 164 | 165 | ΟΧ 1 | 162–163: / | ΟΧ 2

166–167: 91 | Το οχ. αρ. 1 οδηγούμενο ... τροχαίως [redacted] του υπό [redacted] [redacted] Δ/Τ Λευκωσία ... ο οδηγός διέσχιζε την λεωφόρο από το αριστερό προς το δεξιό, ως η πορεία του αυτοκινήτου. Ο οδηγός ... οχ.1 ... | ΟΧ 1 | 168–169: / | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185
1	1	01	2	1	1	23	1	/	1	17	3	1	1
2	0	00	0	0	3	18	1	/	6	01	1	1	1
3													
4													
5													
6													
7													

[redacted]

186: A | 187–190: 2 1 1 | 191–194: 2 0 5 2 | 195–198: 2 0 5 3

199–202: 2 1 0 0 | 203–206: 2 0 5 9

ΥΠΟΓΡΑΦΗ | 207–210: 8 | 211: 2 | 212–215: 6 | 21/12/08

1 | | 1 | | 1 | ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

2 Λευκωσία | 1 1 | Τροχαία | 4: 21 | 6: 2 | 7–11: 00105 | T

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
22	03	09	1	04	10	01	02	1	1	2	1	2	00122	2A

39–40 / Λευκωσία
Λεωφ. Σαλαμίνος

41 | 45 | 46: 1 | 47–48: 14

57: 1 Βύρωνος Ρούσσα

49 – 51 | 52 – 54: 005 | 55–56: 22

58–60: 15:2

61–65: R0710 | 66–70: R0711 | 71 | 72–74: 02:3 | 75–76: 24 | 77–78: —

79: 8 | 80: 2 | 81: 3 | 85 – 87: 050 | 88: 2 | 89: 2
82: 1 | 83: 1 | 84: 1

90: 1
4
91

[redacted]

92–97: [redacted] | 92–97 | 98: 1

99 100 101: 4 2 3 | 102: 1 | 103: 2 | 104–109: [redacted] | 110 – 115: 151250 | 100 | 102 | 103 | 104 | 109 | 110 – 115

116: 1 | 117: 10 | 119 – 124: 198960 | 125–130: 260408 | 131–136: 250409 | 117 | 119 – 124 | 125–130 | 131–136

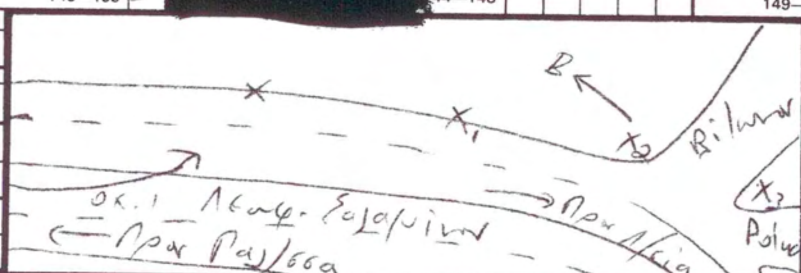
137: 1 | 138–139: —

[redacted]

140–141: 07 | A3 | 142–143: 20 01 | 140–141 | 142–143

144–148: 1595 | 149–155: [redacted] | 144–148 | 149–155 | 156–157: 21

158–159: 06 | 158–159 | ΟΧ 1 | 162–163
160–161: 01 | 160–161 | ΟΧ 2
164: 1 | 164
165: 1 | 165



Το όχημα 1 κάτω από συνθήκες που διερευνώνται εισήλθε στην αντίθετη λωρίδα για να προσπεράσει προπορευόμενο όχημα και ο οδηγός έχασε τον έλεγχο με αποτέλεσμα να κτυπήσει στο πεζοδρόμιο και αφού διέσχισε λωρίδα τροχαίας κτύπησε σε δένδρο και ανατράπηκε

166–167: 15 | ΟΧ 1 | 168–169: — | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	1	1	1	28	1	–	5	67	2	1	1	[redacted]
2	1	03	2	1	1	24	1	–	5	08	2	1	1	
3														
4														
5														
6														
7														

186 187 – 190: AA 0356
ΥΠΟΓΡΑΦΗ: ΑΑ/Α36

191 – 194: 0412 | 199–202: 0422 | 207–210: 10 | 9 | 211

195 – 198: 0412 | 203–206: 0413 | 212–215: 5

25/3/09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1		2 3		4 6	7 — 11
1 1	Λευκωσία	1 1	Τροχαία	2 1 1 2	00232

7

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32 — 36	37–38
20	05	09	6	23	10	01	01	2	1	2	2	1	00248	29

39–40: 14

Λευκωσία

Λεωφ. Ομήρου

Στασίνου Ευαγόρου

41 — 45:

46: 1 47–48: ~~28~~

49 — 51 52 — 54: —

55–56: ~~26~~

57: 6 Πλατεία Ελευθερίας

58–60: 14:0

61 — 65: P0704 66 — 70: 71:

72–74: 028 75–76: 33 77–78: +

79	80	81	82	83	84	85 — 87	88	89
1	3	3	1	1	1	050	2	2

90: 4 4 [redacted]

91: [redacted]

92—97: [redacted] 92—97: 98: 1

100 101	102	103	104 — 109	110 — 115
2 4	1	–	—	—

116: 1 117: – 119 — 124: — 125—130: — 131—136:

137: 1 [redacted]

138–139: 02

140—141: 0045 123 142–143: 1985

144—148: –1299 149—155: [redacted] 140—141: 142–143: 144—148: 149—155:

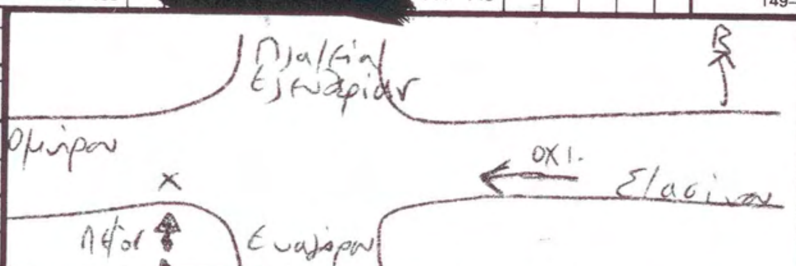
156–157: +

158—159: 06

160—161: 01

164: 1

165: 1



158—159: 160—161: 164: 165:

ΟΧ 1 162–163: + ΟΧ 2

Το όχημα 1 εισήλθε έναντι λεωφορειόδρομου στην Λεωφ. Ομήρου και κτύπησε τον [redacted] ο οποίος διασταύρωνε από αριστερά προς τα δεξιά ως η πορεία του

166–167: 01 ΟΧ 1 168–169: + ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176-177	178	179	180	181—2	183	184	185	
1	1	01	2	1	3	24	1	–	1	17	4	–	3	[redacted]
2	0	00	0	0	3	22	1	–	5	01	2	1	1	
3														
4														
5														
6														
7														

186 187 — 190: A A 0356

ΥΠΟΓΡΑΦΗ: Αστ/Αστ

191 — 194: 2312

199—202: 2322

207—210: 10

211: 9

195 — 198: 2312

203—206: 2316

212—215: 4

3/6/09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 1 2 | 2 3: 1 1 | 4: 2 1 | 6: 2 | 7–11: 0 0 3 5 2 | T

2: Λευκωσίας — Τροχαία

12–13: 04 | 14–15: 08 | 16–17: 09 | 18: 3 | 19–20: 12 | 21–22: 15 | 23–24: 03 | 25–26: 01 | 27: 1 | 28: 1 | 29: 2 | 30: 2 | 31: 2 | 32–36: 00349 | 37–38: 19

40: Λευκωσία
Λεωφόρος Σαλαμίνος

41–45: | 46: 1 | 47–48: 2

57: Λεωφόρος Στασίνου — Τσουρίου κ' Καρότα

49–51: – – – | 52–54: 1 1 0 | 55–56: 2 9

58–60: 0 7 3

61–65: R 0 7 1 0 | 66–70: S 0 6 0 9 | 71: | 72–74: 0 3 0 | 75–76: 1 7 | 77–78: —

79: 8 | 80: 2 | 81: 3 | 85–87: 0 5 0 | 88: 2 | 89: 2
82: 1 | 83: 1 | 84: 1

90: 1
1
91: [redacted]

92: [redacted] | 92: [redacted] | 98: [redacted]

99: 1 | 100–101: 66 | 102: 1 | 103: 2 | 104: [redacted] | 109: | 110–115: 1 0 1 0 1 3
100–101: 24 | 102: 1 | 103: 2 | 104: [redacted] | 109: | 110–115: 6 6 0 7 1 0

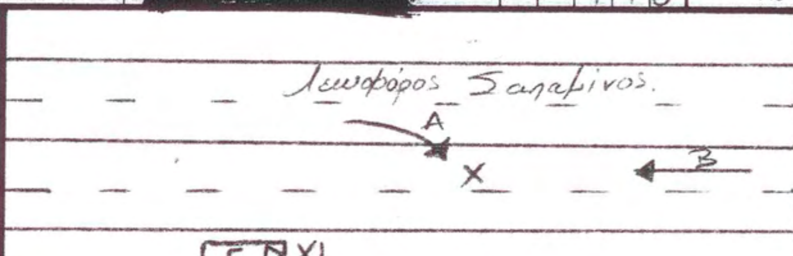
116: 1 | 117: 2 2 | 119–124: 12 0 2005 49 209 | 125–130: 0 8 0 7 0 9 | 131–136: 0 7 0 7 1 0
117: 9 9 | 119–124: 9 9 9 9 9 9 | 125–130: 9 9 9 9 9 9 | 131–136: 9 9 9 9 9 9

137: 1 | 138–139: 0 4
[redacted]

140–141: 104 | [redacted] | 142–143: 0 8 (20)
140–141: 395 | [redacted] | 142–143: 0 3 (20)

144–148: 1 4 6 1 | 149–155: [redacted]
144–148: 9 9 8 | 149–155: [redacted] | 156–157: —

158–159: 0 6 | 158–159: 0 3 | ΟΧ 1
160–161: 0 2 | 160–161: 0 1 | 162–163: 1 4 | ΟΧ 2
164: 1 | 164: 1
165: 1 | 165: 2



Γ D X1

Το αυτοκίνητο Α εκινείτο στην λεωφόρο Σαλαμίνος με κατεύθυνση από Στασίνου προς Τσουρίου κ' Καρότα. Σε κάποιο σημείο του δρόμου επιχείρησε στροφή δεξιά με αποτέλεσμα να συγκρουστεί με την μοτοσικλέτα Β η οποία κινείτο αριστερότερα και συγκρούστηκε με το αυτοκίνητο Γ.

166–167: 0 2 | ΟΧ 1
168–169: 0 1 | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	0 1	2	1	1	6 6	1	–	1	1 7	4	–	3	[redacted]
2	2	0 1	4	3	1	2 4	1	–	1	0 6	2	1	1	[redacted]
3	3	0 0	0	0	1	4 2	1	–	5	1 7	4	–	3	[redacted]
4														
5														
6														
7														

186–190: ΑΑ 2 6 4 0 | 191–194: 1 2 2 0 | 195–198: 9 9 9 9
199–202: 1 2 3 0 | 203–206: 9 9 9 9
207–210: 1 0 | 211: 9 | 212–215:

ΥΠΟΓΡΑΦΗ
P.C. 2640

Α/Αστ/14
3/8/09

2 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ 4 6 7 11

Λευκωσίας 1 1 Τροχαία 2 11 2 0 0 3 9 2

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32 — 36	37—38
0 4	0 8	0 9	3	1 2	1 5	0 3	0 1	1	1	2	2	2	3 4 9	

40 41 45 46 47—48

57 49 — 51 52 — 54 1 1 0 55—56

58—60

61 R 0 7 1 0 65 66 S 0 6 0 9 70 71 72—74 75—76 77—78

79 80 81 85 — 87 88 89

82 83 84

90

[redacted]

91 92—97 98

[redacted] 92- [redacted]

100	101	102	103	104	109	110 — 115

100	102	103	104	109	110 — 115
4 6	1	2	[redacted]		2 8 1 2 3 3

116

117 119 — 124 125—130 131—136

117	119 — 124	125—130	131—136
2 2	9 9 9 9 9 9	9 9 9 9 9 9	9 9 9 9 9 9

137 138—139

[redacted]

140—141 142—143

140—141 0 4 11 [redacted] 142—143 2 0 0 7

144—148 149—155

144—148 1 5 9 8 149—155 [redacted] 156—157

ΟΧ 1

158—159 158—159 0 6

160—161 160—161 0 8 162—163

ΟΧ 2

164 164 1

165 165 1

166—167

ΟΧ 1

168—169 1 0

ΟΧ 2

ΠΡΟΣΩΠ	170	171—172	173	174	175	176—177	178	179	180	181—2	183	184	185
1													
2													
3													
4													
5													
6													
7													

186 187 — 190 A A 2 6 4 0

191 — 194 195 — 198

199—202 203—206

ΥΠΟΓΡΑΦΗ 207—210 211 212—215

P.c. 2640

A/Α074 3/8/09

F.1. CRASH DATA COLLECTED FOR GRIVA - DIGENI AVENUE

ΘΑΝΑΤΗΦΟΡΟ ΤΡΟΧΑΙΟ ΔΥΣΤΥΧΗΜΑ

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1	2–3	4–6	7–11
1 2			
ΛΕΥΚΩΣΙΑΣ 2 1 2	ΤΡΟΧΑΙΑ	2 1 1 2	0 0 1 3 2

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
17	03	07	7	20	55	03	01	1	1	2	1	2	1 0 3	07

39–40: 1

ΛΕΥΚΩΣΙΑ — ΕΓΚΩΜΗ

ΛΕΩΦΟΡΟΣ ΓΡΙΒΑ ΔΙΓΕΝΗ

41–45:

46: 1 | 47–48: 1 1

49–51 / 52–54: 0 4 2 | 55–56: 2 9

57: 1

ΚΑΦΑΛΗ — ΠΑΠΑΧΡΙΣΤΟΦΟΡΟΥ

HILTON PARK

58–60: 1 4 0

61–65	66–70	71	72–74	75–76	77–78
F 0 8 0 2	G 0 8 0 1		0 2 0	2 4	+

79	80	81	82	83	84	85–87	88	89
8	2	8	1	1	1	0 5 0	2	2

90: 1 4

[redacted]

91: [redacted]

92–97: [redacted] | 98: 1

	100	101	102	103	104–109	110–115
Όχημα 1	2	3	1	1 0	[redacted]	2 8 0 2 0 8
Όχημα 2	2	0	1	1 0	[redacted]	2 4 0 4 0 6

116: 1

	117	119–124	125–130	131–136
Όχημα 1	INTER LIFE 5 0	5 0 3 0 7 7 0	0 1 0 3 0 7	2 8 0 2 0 8
Όχημα 2	—	—	—	—

137: 1 | 138–139: 1 1

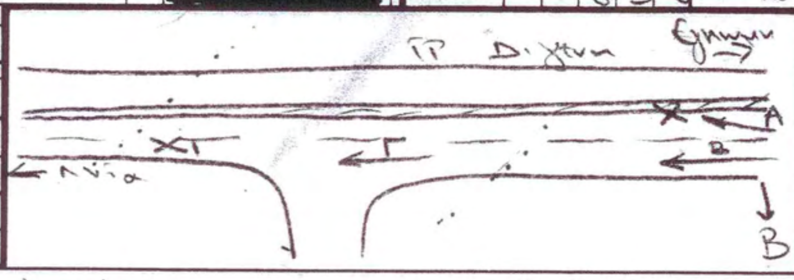
Όχημα 1	Όχημα 2
ΙΔΙΟΣ	ΙΔΙΟΣ
ΙΔΙΑ.	ΙΔΙΑ.

	140–141		142–143	144–148	149–155
Όχημα 1	0 1 7 0	HAYABUSA.	2002	1 2 9 8	[redacted]
Όχημα 2	0 1 1 5	NINJA	2005	6 3 6	[redacted]

156–157: 1

	158–159	160–161	164	165
Όχημα 1	0 3	0 1	1	1
Όχημα 2	0 3	0 1	1	1

162–163: — (ΟΧ 1, ΟΧ 2)



Οι μοτοσικλετιστές Α και Β επιδίδονταν σε αγώνα ταχύτητας. Πριν την σύγκρουση ο μοτοσικλετιστής Α έχασε τον έλεγχο της μοτοσικλέτας του [illegible] και ανατράπηκε. Στη συνέχεια [illegible] στο [illegible] [illegible] ήταν [illegible]. Ο μοτοσικλετιστής Β δεν συμμορφώθηκε με [illegible].

166–167: 0 1 (ΟΧ 1) | 168–169: 0 1 (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	4	3	1	23	1	2	1	06	1	1	1	[redacted]
2	2	01	4	1	1	20	1	—	1	06	4	—	3	[redacted]
3	3	01	2	1	1	27	1	—	1	17	4	—	3	[redacted]
4	3	03	2	1	1	22	2	—	5	18	4	—	3	[redacted]
5														
6														
7														

186	187–190	191–194	195–198
5 0	4 7 2 5	2 0 5 8	2 0 5 5

199–202	203–206	207–210	211	212–215
2 1 1 0	2 1 0 3	1 2	2	8

ΥΠΟΓΡΑΦΗ [signature] Αλωχυρά

[signature] 4725

28/3/07

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΛΕΥΚΩΣΙΑΣ 2 1 1 2 ΤΡΟΧΑΙΑ

4 6: 1 0 1

7 11: 1 1 3 2

13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32	36	37—38
1	7 0	3 0	7	2 0	5 5	0 3	0 1	1	1	2	1	2	— 1 0	3	

40 41 45 46 47—48

49 — 51 52 — 54 55—56

57

58—60

61 65 66 70 71

72—74 75—76: 2 77—78

79 80 81 82 83 84 85 — 87 88 89

90

[redacted]

91

92—97 92—97 [redacted] 98: 1

100	101	102	103	104	109	110 — 115
						0 2 1 0 5 0

100	102	103	104	109	110 — 115
2 7	1	2	[redacted]		0 2 1 0 5 0

116

117 119 — 124 125—130 131—136

117 119 — 124: 1 8 3 1 2 5 1 6 5

125—130: 1 2 0 2 0 7

131—136: 1 2 0 2 0 8

137 138—139: 1 1

ΙΔΙΟΣ

ΙΔΙΑ.

2

140—141 142—143

140 00 1 5 . 320

142—143: 9 8 3

144—148 149—155

144—148: — 1 9 9 1

149—155 [redacted]

156—157

ΟΧ 1

158—159 158—159: 0 6

162—163

160—161 160—161: 0 3

ΟΧ 2

164 164: 2

165 165: 2

166—167: 0 1

ΟΧ 1

168—169

ΟΧ 2

ΠΡΟ-ΣΩΠ	170	171—172	173	174	175	176-177	178	179	180	181—2	183	184	185
1								2					
2													
3													
4													
5													
6													
7													

186 187 — 190

Ρ Ρ ΧΡΙΣΤΙΝ Σ

ΥΠΟΓΡΑΦΗ

191 — 194 199—202 207—210 211

195 — 198 203—206 212—215

29/3/07

1	1	ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ	2 3	ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ	4–6	7–11
		Λευκωσία	1 1	Τμήμα	2102	Θ0312

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
28	06	07	5	06	00	01	01		1	2	1	2	00282	09

38–40: Λ/σια – Εγκωμης
Λεωφ. Γρίβα Διγενή

41–45	46	47–48
	1	2

49–51	52–54	55–56
---	060	--

57: 1
Αχαιών — 28ης Οκτωβρίου
Απέναντι από TOYOTA

58–60: 05:9

61–65	66–70	71	72–74	75–76	77–78
E0802			02π	24	-

79	80	81	82	83	84	85–87	88	89
8	1	2	1	1	1	050	2	2

90: 1, 1
[redacted]
91
[redacted]
92–97: [redacted]
98: 1

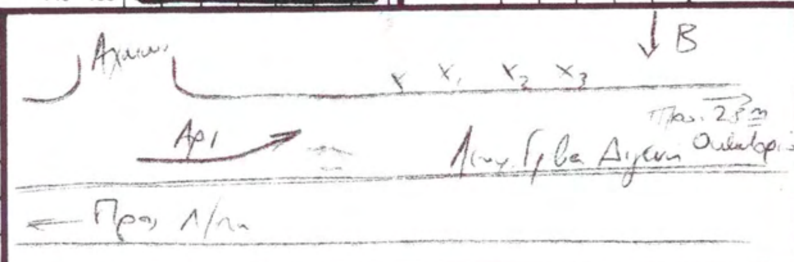
100 101	102	103	104–109	110–115
27	1	3	- - - - - -	

116
117: -
119–124: - - - - - -
125–130
131–136

137: 1
[redacted]
138–139: 22

140–141		142–143	144–148	149–155	156–157
01 89	Civic	1995	-1790	[redacted]	10

158–159	160–161	164	165
06	02	1	1



Το όχημα Αρ1 παρεξέκλινε της πορείας του προς τα αριστερά και [illegible] διασχίζοντας [illegible] ταπέζι, [illegible] οδικούς φωτισμούς και δύο δέντρα

166–167: 01 (ΟΧ 1)
168–169: - (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	2	3	27	1	-	5	17	1	1	1	[redacted]
2														
3														
4														
5														
6														
7														

186	187–190	191–194	195–198
E	E0131	0600	0600

199–202	203–206	207–210	211	212–215
0610	0612	10	3	12

ΥΠΟΓΡΑΦΗ

1/7/07

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1	2	3	4	6	7	11
2	Λευκωσίας	2112	2112		00504	

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
04	04	07	3	00	10	02	01	1	1	2	1	2	00423	17

39–40: 1

~~Λευκωσία~~ Έγκωμη

Λεωφ. Γρίβα Διγενή

οδό Στασίνου

41–45	46	47–48
	1	2X

49 – 51 52 – 54 55–56

57: 1

58–60: 125

61–65	66–70	71	72–74	75–76	77–78
K0901			024	17	

79	80	81	82	83	84	85 – 87	88	89
2	2	8	1	1	1	050	2	2

90: 1

4

91

[redacted]

92–97 [redacted]

100	101	102	103	104–109	110 – 115
2	3	2	–	– – – – – –	– – – – – –

116: 1

117	119 – 124	125–130	131–136
– –	– – – – – –	– – – – – –	– – – – – –

137: 1

Η ΙΔΙΑ

Η ΙΔΙΑ.

140–141 – – ΠΟΔΗΛΑΤΟ 142–143 – –

144–148 – – – – – 149–155 – – – – – – –

158–159: 01

160–161: 02

164: –

165: –

[redacted]

92–97 [redacted]

98: 1

100	102	103	104–109	110 – 115
23	1	1	[redacted]	161155

117	119 – 124	125–130	131–136
04	050949	311006	311007

138–139: 04

[redacted]

140–141: 0189 INTEGRA 142–143: 97

144–148: 1790 149–155: [redacted]

156–157: 1 ΟΧ 1

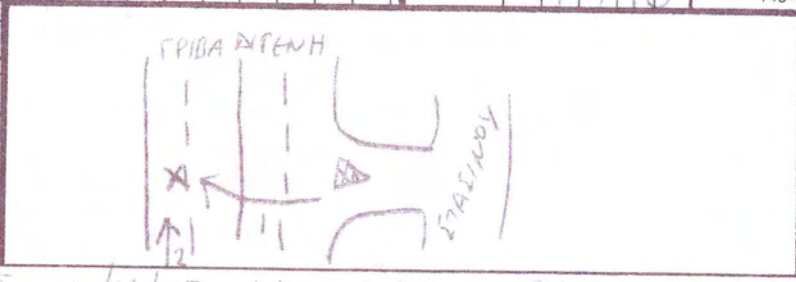
158–159: 06

162–163: – ΟΧ 2

160–161: 02

164: 1

165: 1



ΣΤΙΣ 4/4/07 ΚΑΙ ΩΡΑ 0010 ΤΟ ΠΟΔΗΛΑΤΟ 1 ΜΕ ΟΔΗΓΟ ΤΗΝ 1η ΕΞΗΛΘΕ ΜΕ ΚΛΙΣΗ ΔΕΞΙΑ ΑΠΟ ΤΗΝ ΣΤΑΣΙΝΟΥ ΠΡΟΣ ΤΗΝ ΓΡΙΒΑ ΔΙΓΕΝΗ ΜΕ ΑΠΟΤΕΛΕΣΜΑ ΝΑ ΚΤΥΠΗΘΕΙ ΑΠΟ ΤΟ ΕΞ ΑΡΙΣΤΕΡΩΝ ΤΟΥ ΑΥΤΟΚΙΝΗΤΟ 2 ΠΟΥ ΟΔΗΓΟΥΣΕ Ο 2ος ΜΕ ΕΥΘΕΙΑ ΠΟΡΕΙΑ ΣΤΗΝ ΓΡΙΒΑ ΔΙΓΕΝΗ.

166–167: 01 ΟΧ 1

168–169: 02 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	8	3	3	23	2	–	5	02	2	1	1	[redacted]
2	2	61	2	1	3	23	1	–	5	17	4	–	3	[redacted]
3														
4														
5														
6														
7														

186	187 – 190	191 – 194	195 – 198
Λ	Λ2652	0010	0010

ΥΠΟΓΡΑΦΗ Λ/Λ 2652

199–202: 0025

207–210: 15

211:

203–206: 0020

212–215: 10

Πλούταρχος

1/10/07

1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΛΕΥΚΩΣΙΑ 6 1 ΤΡΟΧΑΙΑ

4 6: 2 1 1 2 — 7 11: 0 0 5 2 2

12–13 14–15 16–17: 0 4 0 9 0 7 — 18: 3 — 19–20 21–22 23–24: 1 9 0 0 0 1 — 25–26: 0 2 — 27: 1 — 28: 1 — 29: 1 — 30: 2 — 31: 2 — 32 36: 0 0 4 6 6 — 37–38: 2 9

39–40: 12

ΛΕΥΚΩΣΙΑ

ΛΕΩΦ. ΒΥΡΩΝΟΣ

41 45 — 46: 1 — 47–48

ΓΡΑΒΑ ΑΙΓΕΝΗ ΑΓ ΟΜΟΛΟΓΗΤΩΝ

49 – 51 52 – 54 — 55–56

57: 6

58–60: 0 8 6

61 65: M 0 8 0 3 — 66 70 — 71

72–74: 0 2 0 — 75–76: 3 5 — 77–78

79: 1 — 80: 3 — 81: 8 — 85 – 87: - 5 0 — 88: 2 — 89: 2

82: 1 — 83: 1 — 84: 1

90: 1 3

[redacted]

ΠΕΖΕΣ

91

92–97 [redacted] — 92–97 — 98: 1

99 100 101 102 103 104 109: 4 6 4 1 2 [redacted] — 100 102 103 104 109

110 – 115: 3 1 1 1 2 — 110 – 115

116: 1 — 117: 5 0 — 119 – 124: 0 5 6 3 4 9 — 125–130: 8 6 0 7 0 4 — 131–136: 0 1 1 1 0 — 117 119 – 124 125–130 131–136

137: 1 — 138–139: 0 2

[redacted]

140–141: 8 9 — FIT — 142–143: 2 0 0 4 — 140–141 — 142–143

144–148: - 1 3 3 9 — 149–155: [redacted] — 144–148 — 149–155 — 156–157

158–159: 0 6 — 158–159 — ΟΧ 1

160–161: 1 1 — 160–161 — 162–163

ΑΓ ΟΜΟΛΟΓΗΤΩΝ

ΓΡ ΑΙΓΕΝΗ

A

ΒΥΡΩΝΟΣ

164: 1 — 164 — ΟΧ 2

165: 1 — 165

Το αυτοκίνητο Α ... την οδό Γρυβα Βύρωνος και ... τα πεζές Φαγγο ... και ... Νατρα

166 167: 0 2 — ΟΧ 1 — 168–169 — ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	0 1	2	1	1	6 4	1	-	5	1 7	4		3	[redacted]
2	0	0 0	0	0	1	0 9	2	-	5	0 1	2	6	2	[redacted]
3	0	0 0	0	0	3	0 5	2	-	5	0 1	2	0	2	[redacted]
4														
5														
6														
7														

186 187 – 190: Α 3 3 1 6

ΥΠΟΓΡΑΦΗ

25/9/07

191 194: 1 9 2 0

199–202: 0 3 0

207–210: 0 0 3 0

211: -

195 – 198

203–206

212–215

7/10/07

1 | 2 — ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — 2 3 — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

2 — ΛΕΥΚΩΣΙΑ — 1 1 — ΤΡΟΧΑΙΑ — 4: 2 1 1 — 6: 2 — 7: 000 17 — Τ

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
14	01	08	2	14	00	03	01	1	1	2	1	2	000 14	23

39–40: 1

ΛΕΥΚΩΣΙΑ – ΕΓΚΩΜΗ

ΓΡΙΒΑ ΔΙΓΕΝΗ

28ης ΟΚΤΩΒΡΙΟΥ

41 — 45 — 46: 1 — 47–48: ~~23~~

49 – 51 52 – 54 — 55–56: 2?

57: 6

58–60: 1 3 0

61–65: Ε 0 8 0 4 — 66–70 — 71 — 72–74: 0 2 0 — 75–76: 0 ? — 77–78: 1

79: 2 — 80: 3 — 81: 8 — 85 – 87: 0 5 0 — 88: 2 — 89: 2

82: 1 — 83: 1 — 84: 1

90: 3

1

91

[redacted]

92–97: [redacted]

100	101	102	103	104	109	110 – 115
2	2	1	1	[redacted]		11 11 08

116: 1

117	119 – 124	125–130	131–136
1 2	16 43 02	07 04 07	06 04 08

137: 1

[redacted]

140–141: 8 7 — 142–143: 29 03

144–148: — 49 — 149–155: [redacted]

ΛΕΥΚΩΣΙΑ

92–97: [redacted] — 98: 1

100	102	103	104	109	110 – 115
1 8	1	2	[redacted]		03 05 59

117	119 – 124	125–130	131–136
1 8	31 17 1 20	16 05 07	29 03 08

138–139: 0 4

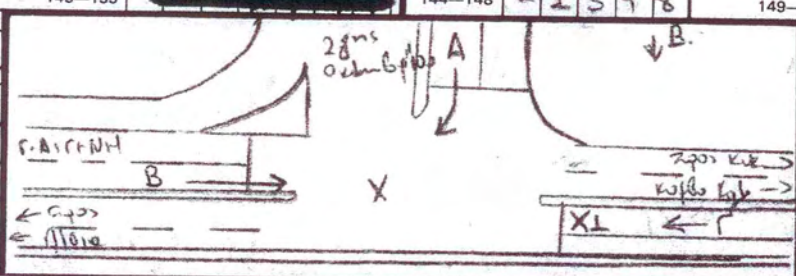
[redacted]

140–141: 10 8 9 — COOPER S — 142–143: 29 03

144–148: – 1 5 9 8 — 149–155: [redacted]

156–157: 2 3

158–159: 0 2 — 160–161: 0 3 — 164: 1 — 165: 1



ΟΧ 1 — 158–159: 0 6 — 162–163: 1 — 160–161: 0 1 — ΟΧ 2 — 164: 1 — 165: 1

Το όχημα Α εισήλθε στην διασταύρωση παραβιάζοντας το κόκκινο φως στην πορεία του και συγκρούστηκε με το εκ δεξιών του ερχόμενο όχημα Β. Από την σύγκρουση ο οδηγός του Α' κατευθύνθηκε ~~και~~ κτύπησε στο όχημα Γ' που ήταν σε στάση αναμένοντας αφού ωθήθηκε από το όχημα Β.

166–167: 0 2 — ΟΧ 1 — 168–169: 0 1 — ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	0 1	4	3	3	2 2	1	–	5	0 4	2	3	2	[redacted]
2	2	0 1	1	1	1	1 8	1	–	1	1 7	4	—	3	[redacted]
3	3	0 1	1	1	1	5 0	1	–	1	1 7	4	—	3	[redacted]
4														
5														
6														
7														

186 187 – 190: Α Α 2 5 2 0

ΥΠΟΓΡΑΦΗ — ΑΑ 2520

191 – 194: 14 05 — 199–202: 14 15 — 207–210: 10 — 2 211

195 – 198: 14 05 — 203–206: 14 08 — 212–215: 2

ΑΣΤ 4231

20/1/08

2 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ 4 6 7

ΛΕΥΚΩΣΙΑ 1 1 ΤΡΟΧΑΙΑ 2 1 1 2 300 17

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32	36	37–38
14	01	08	2	14	00	03	01	1	1	2	1	2	000	14	03

39–40 41 45 46 47–48

57 49 — 51 52 — 54 55–56

58–60

61 65 66 70 71 72–74 75–76 77–78

E0804

79 80 81 85 — 87 88 89

82 83 84

90

91

92–97

100 101 102 103 104 109 110 — 116

116

117 119 — 124 125–130

137 131–136

140–141 142–143 29

144–148 149–155 N 4 9 7

158–159

160–161

164

165

[redacted]

[redacted]

92–97 [redacted] 98

100	102	103	104	109	110 — 115
56	1	2	[redacted]		010827

117	119 — 124	125–130	131–136
07	074888	300707	270708

138–139

[redacted]

140–141 533 LANCER 142–143 91

144–148 -1468 149–155 [redacted] 156–157

ΟΧ 1

158–159 06 162–163

160–161 01

ΟΧ 2

164 1

165 1

166–167

ΟΧ 1

168–169 08

ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1														
2														3
3														3
4														
5														
6														
7														

186 187 — 190

A A 2 5 2 0

ΥΠΟΓΡΑΦΗ

191 — 194: 1405

199–202: 1415

207–210: 1 0 2 211

195 — 198: 1405

203–206: 1408

212–215

Α/Χ 4731

20/1/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Πεδίο	Τιμή
1	2
2–3	01
	Τροχαία
4–6	7 1 1 2
7–11	00051
12–13	30
14–15	01
16–17	08
18	4
19–20	16
21–22	30
23–24	02
25–26	01
27	1
28	1
29	2
30	2
31	2
32–36	00037
37–38	23
39–40	Λήμα / Γρίβα Διγενή / Γρ. Διγενή Λόρδου Βύρωνος
41–45	
46	1
47–48	3
49–51 52–54	– – – – – –
55–56	–
57	6
58–60	08:2
61–65	M0820
66–70	
71	
72–74	02:2
75–76	98
77–78	–
79	1
80	7
81	1
82	1
83	1
84	1
85–87	050
88	2
89	2
90	2

Όχημα 1

[redacted]

91 | 92–97: – – – – – –

100	101	102	103	104–109	110–115
2	0	1	3	– – – – – –	– – – – – –

116: 1

117	119–124	125–130	131–136
– –	– – – – – –	– – – – – –	– – – – – –

137: 1

[redacted]

140–141: 1 1 | 142–143: 19 95 | 144–148: – 1396 | 149–155: [redacted]

158–159: 0 6 | 160–161: 01 | 164: 1 | 165: 1

Όχημα 2

[redacted]

92–97: [redacted] | 98: 1

100	102	103	104–109	110–115
2 1	1	3	[redacted]	9 9 9 9

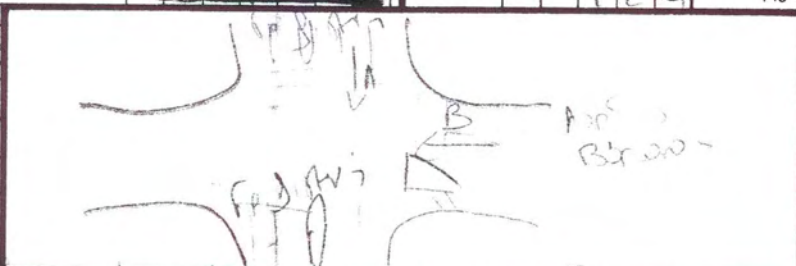
117	119–124	125–130	131–136
9 9	9 9 9 9 9 9	9 9 9 9 9 9	9 9 9 9 9 9

138–139: 0 1

[redacted]

140–141: 09 87 | 142–143: 20 03 | 144–148: – – 124 | 149–155: [redacted]

156–157: – | 158–159: 1 1 | 160–161: 01 | 162–163: – | 164: 1 | 165: 1



Ο όχημα Α [illegible] Λ. Βύρωνος [illegible] Γρ. Διγενή [illegible] όχημα Β [illegible] Λ. Βύρωνος

166–167: 0 1 (ΟΧ 1) | 168–169: 0 1 (ΟΧ 2)

ΠΡΟ-ΣΩΠ	170	171–172	173	174	175	176-177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	20	1	–	1	17	4	–	3	[redacted]
2	2	01	4	3	3	21	1	–	1	17	2	1	1	[redacted]
3														
4														
5														
6														
7														

186: Α | 187–190: 4847

ΥΠΟΓΡΑΦΗ

191–194: 1630 | 199–202: 1645 | 207–210: 15 | 211: 7

195–198: 1630 | 203–206: 1640 | 212–215: 10

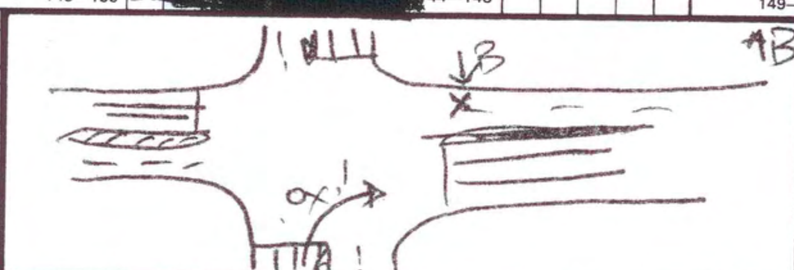
4131

13/2/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Πεδίο	Τιμή
1	2
	1161/08
2	1
3	1
	Τροχαία
4–6	2 1 2
7–11	00167
	T
12–13	05
14–15	04
16–17	08
18	7
19–20	10
21–22	30
23–24	01
25–26	01
27	1
28	1
29	2
30	2
31	2
32–36	00128
37–38	29
39–40	02
	Λευκωσίας, Γρίβα Διγενή
	Δ. Σεβέρη — Κ. Μάτση
46	1
47–48	1
49–54	– – – 0 5 6
57	6
58–60	17:4
61–65	NO 9 25
66–70	NO 8 OP
72–74	020
75–76	36
79	1
80	3
81	1
82	1
83	1
84	1
85–87	050
88	2
89	2

Πεδίο	Τιμή
90	3 [redacted]
91	1
92	[redacted]
98	1
99	1
100–102	2 9 2
103	2
104–109	[redacted]
110–115	220348
116	1
117	18
119–124	300794
125–130	011007
131–136	011008
137	1
138–139	07
140–141	0941
	[redacted]
142–143	03
144–148	–1995
149–155	[redacted]
158–159	06
160–161	04
164	1
165	1
166–167	02



Το οχ.1 κινείτο στη οδό [redacted], η οποία διασταυρώνει οδό το αριστερό μέρος το δεξιό ως η μπροστινή του οχ. 1. [illegible] στο [illegible]. Η οδηγός [illegible] [illegible].

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	29	2	–	1	17	4	–	3	[redacted]
2	~~1~~	~~00~~	~~0~~	~~0~~	1	67	2	–	9	01	2	1	1	[redacted]
3														
4														
5														
6														
7														

Πεδίο	Τιμή
186–190	AA 3406
191–194	1030
195–198	1030
199–202	1045
203–206	1040
207–210	15
211	2
212–215	10

ΥΠΟΓΡΑΦΗ [signature]

13-4-08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Πεδίο	Τιμή
1	2
	Λευκωσία
2–3	1 1
	Τροχαία
4–6	2 1 1 2
7–11	00235
12–13, 14–15, 16–17	27 05 08
18	3
19–20, 21–22	15 55
23–24	03
25–26	01
27	1
28	1
29	2
30	2
31	2
32–36	90216
37–38	11
39–40	1
41–45	
46	1
47–48	
49–51	
52–54	006
55–56	
57	1
58–60	06.1
61–65	JOR02
66–70	JOR01
71	
72–74	233
75–76	16
77–78	
79	8
80	1
81	2
82	1
83	1
84	1
85–87	050
88	2
89	2

Εγκώμης.
Λεωφ. Γρ. Διγενή

Ιλιούβον Παπατσού Λεωφ. Αρχαγγέλου

90: 1
1
91

Όχημα 1

[redacted]

92–97 [redacted]

98: 1

99	100	101	102	103	104–109	110–115
1	1	3	1	1	[redacted]	040208

116: 1

117: 22 — 119–124: 200 05261 (ΑΝΩ 0 05261)

125–130: 050508
131–136: 040803 49

137: 1

Ίδιος
Ίδια.

140–141: 89 — DIO — 142–143: 1

144–148: 48 — 149–155: [redacted]

Όχημα 2

[redacted]

92–97 [redacted]

100	102	103	104–109	110–115
18	1	2	[redacted]	280658

117: 49 — 119–124: [illegible]

125–130:
131–136:

138–139: 04

[redacted]

140–141: 11 — TORRANO — 142–143:

144–148: — 149–155: [redacted]

156–157:

	ΟΧ 1	ΟΧ 2
158–159	02	06
160–161	01	08
164	1	1
165	1	1

1 3 2 Λεωφ. Γρ. Διγενή → προς Δέρυνεια κύκλου.

Το όχημα 1 [illegible] με υψηλή [illegible] δεξιά γύρισμα συνοριακής με-
αποτέλεσμα να συγκρουστεί με το όχημα 2. Αποτέλεσμα ο οδηγός της μοτοσικλέτας (όχημα 1)
ως συνέχεια να κτυπήσει στο σταθμευμένο όχημα 3 στην αριστερή γωνία
λεωφόρου

166–167: 14 (ΟΧ 1)
168–169: 01 (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	02	8	3	3	43	1	–	5	04	2	1	1	[redacted]
2	2	01	2	1	1	18	1	2	5	17	4	–	3	[redacted]
3	2	03	2	1	1	18	1	2	5	18	4	–	3	[redacted]
4	3	01	2	1	1	52	1	–	5	23	4	–	3/7	[redacted]
5														
6														
7														

186 187–190: Α Π Σ Υ Ο Κ

ΥΠΟΓΡΑΦΗ Ντορλαίμ [illegible] Γαζ [illegible]

191–194	1556
199–202	1610
207–210	14
211	9
195–198	1657
203–206	1605
212–215	8

ΥΑΧ 4731
29/5/08

1 ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ 2 3 ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΛΕΥΚΩΣΙΑ | 2–3: 11 | ΤΡΟΧΑΙΑ | 4–6: 2112 | 7–11: 09235

12–13 14–15 16–17: 070508 | 18: 3 | 19–20 21–22: 1555 | 23–24: 03 | 25–26: 01 | 27: 1 | 28: 1 | 29: 2 | 30: 2 | 31: 1 | 32–36: 20216 | 37–38

39–40 | 41–45 | 46 | 47–48

49–51 52–54 | 55–56

57

58–60: 0

61–65: JOR02 | 66–70: JOR01 | 71 | 72–74: 0 | 75–76: 16 | 77–78

79 | 80 | 81 | 85–87: 0 | 88 | 89

82 | 83 | 84

90 | [redacted]

91 | 92–97 | 92–97 [redacted] | 98

99 100 101 102 103 104 109 110–115 | 100: 52 | 102: 1 | 103: 2 | 104–109: [redacted] | 110–115: 030222

116

117 119–124 125–130 | 117: 10 | 119–124: -47383 | 125–130: 17110A

137 131–136 | 131–136: 161108 | 138–139

ΙΔΙΟΣ

ΙΔΙΑ.

140–141 | 142–143 | 140–141: 24 | DICABIN | 142–143: 84

144–148 | 149–155 | 144–148: -2484 | 149–155: [redacted] | 156–157

158–159 | 158–159: 08 | ΟΧ 1

160–161 | 160–161: 02 | 162–163

ΟΧ 2

164 | 164: 1

165 | 165: 1

166–167

ΟΧ 1

168–169: 91

ΟΧ 2

ΠΡΟ-ΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185
1													
2													5
3													3
4													7
5													
6													
7													

186 187–190: A A3106 | 191–194 | 195–198

199–202 | 203–206

ΥΠΟΓΡΑΦΗ | 207–210 | 211 | 212–215

29/5/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 2 | Λευκωσία | 2–3: 1 1 | Τραχώνια | 4–6: 2 1 2 | 7–11: 00603

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
01	12	08	2	07	50	02	02	1	1	2	2	2	00550	05

39–40: 1

Εγκώμη

Λεωφ. Γρ. Διγενή

~~[illegible]~~ Ελαιώνων Αρχαγγέλου

41–45: | 46: 1 | 47–48: ~~2~~ 6

57: 1 | 49–51 52–54 | 55–56: 17 8

58–60: 1 4 0

61–65: K0904 | 66–70: | 71: | 72–74: 018 | 75–76: 17 | 77–78: 2 ~~2~~

79: 2 | 80: 2 | 81: 3 | 85–87: 050 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 1, 1

[redacted]

91: 1 | 92–97: [redacted] | 98: 1

100	101	102	103	104–109	110–115
1	9	2	2	[redacted]	130559

100	102	103	104–109	110–115
29	1	1	[redacted]	270308

116: 1 | 117: 17 | 119–124: 3002 4 720 | 125–130: 130108 | 131–136: 170104

117: 22 | 119–124: 1302 00 04 3908 | 125–130: 270308 | 131–136: 260309

137: 1 | 138–139: 04

[redacted]

140–141: 0411 | MARCH | 142–143: 2003 | 140–141: 0166 | DR650 | 142–143: 1997

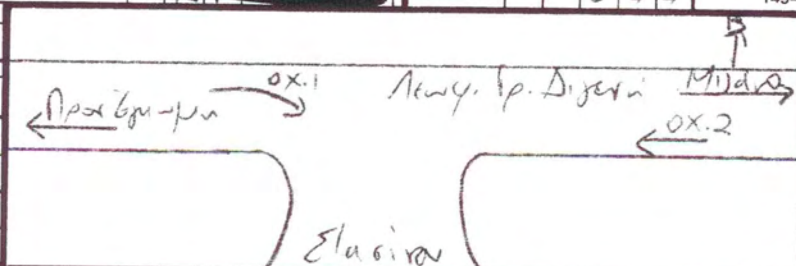
144–148: – 1240 | 149–155: [redacted] | 144–148: + 644 | 149–155: [redacted] | 156–157: +

158–159: 06 | 158–159: 03 | ΟΧ 1

160–161: 01 | 160–161: 01 | 162–163: + | ΟΧ 2

164: 1 | 164: 1

165: 1 | 165: 2



Το όχημα 1 παραβίασε σήμα συνεχίζεται γραμμή και επιχείρησε να στρίψει δεξιά στην οδό Ελαιώνων και συγκρούστηκε με το εξ' αντιθέτου ερχόμενο όχημα 2

166–167: 02 ΟΧ 1 | 168–169: 01 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	19	2	–	1	173	6	1		[redacted]
2	1	03	2	1	1	19	2	–	5	18	4	–	3	[redacted]
3	2	01	4	3	1	29	1	–	1	06	2	1	1	[redacted]
4														
5														
6														
7														

186: A | 187–190: A 0356

ΥΠΟΓΡΑΦΗ Αλ/Αχν

191–194: 0750 | 199–202: 0800 | 207–210: 10 | 211: 9

195–198: 0750 | 203–206: 0810 | 212–215: 20

1/12/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ | 1 | 1

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

ΛΕΥΚΩΣΙΑΣ	2 3: 1 1	Τροχαία	4–6: 2 1 2	7–11: 0 0 6 2 7

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
14	12	08	7	18	45	02	01	1	1	2	1	2	00589	23

39–40: Λευκωσία

Λεωφ. Δ. Σεβέρη

Λεωφ. Γρίβα Διγενή —

41–45	46	47–48
	1	23

49–51	52–54	55–56	57
/ / /	/ / /	79	6

58–60: 06.7

61–65	66–70	71	72–74	75–76	77–78
N 0 9 2 5			02.5	08	+

79	80	81	82	83	84	85–87	88	89	90
1	2	1	1	1	1	050	2	7	+ 4

[redacted]

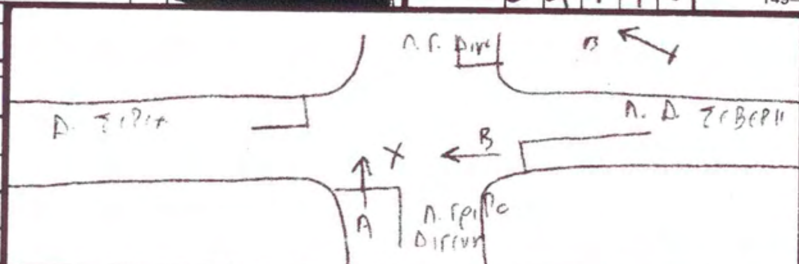
	91	92–97	98	99–101	102	103	104–109	110–115	116	117–118	119–124	125–130	131–136	137
Α	[redacted]	[redacted]		40	1	2	[redacted]	090539	1	50	ΜΡΑ 376 76	260408	250409	1
Β	[redacted]	[redacted]	1	28	1	2	[redacted]	281108		27	2 0 6 1 4 5 8	121108	110309	

[redacted]

	140–141		142–143	144–148	149–155	138–139	156–157
Α	0224	ΜΧ 6	93	1996	[redacted]	07	+
Β	1030	ΕΖ100Μ	01	00099	[redacted]		

	158–159	160–161	164	165
Α	03	01	1	1
Β	03	02	1	1

162–163: +



Την 14/12/08 και ώρα 1845 τα μοτοσυκλέττα Α
εισήλθε από την Λ. Γρίβα Διγενή στην Διασταύρωση με την Λ. Δ. Σεβέρη με
κόκκινο φανάρι με κόκκινο φανάρι και συγκρούστηκε με το αυτοκίνητο Β
το οποίο εκινείτο με πράσινο φανάρι από Λ. Δ. Σεβέρη προς την Διασταύρωση
Τραυματίστηκε ο οδηγός της Α μοτοσυκλέττα

166–167	168–169
01	01

ΟΧ 1 ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	91	2	1	3	40	1	/	1	17	4	/	3	[redacted]
2	2	01	4	2	3	35	1	/	1	06	2	1	1	[redacted]
3														
4														
5														
6														
7														

186	187–190	191–194	199–202	207–210	211	195–198	203–206	212–215
Μ	0163	1845	1855	10	1	1845	1855	10

ΥΠΟΓΡΑΦΗ

Α213
1.1.09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 2 — ΛΕΥΚΩΣΙΑΣ — 2 3: 11 — ΤΥΧΑΙΑ — 4–6: 2102 — 7–11: 00117 — 7

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
22	03	09	1	13	40	02	01	1	1	2	7	2	00123	11

39–40: 1 — ΛΕΥΚΩΣΙΑ / ΕΓΚΩΜΗΣ — Λ. 29 ΓΡΙΒΑ ΔΙΓΕΝΗ

41–45: — 46: 1 — 47–48: 01

57: 1 — 25ης ΜΑΡΤΙΟΥ — Λ. 28 ΑΡΧΑΓΓΕΛΟΥ

49–51: — 52–54: 90 — 55–56: –

58–60: 060

61–65: G0801 — 66–70: H0901 — 71:

72–74: 013 — 75–76: 06 — 77–78: –

79: 3 — 80: 2 — 81: 3 — 82: 1 — 83: 1 — 84: 1 — 85–87: 050 — 88: 7 — 89: 7

90: 1 / 1 — [redacted] — [redacted]

91 — [redacted] — 92–97 [redacted] — 92–97 [redacted] — 98: 1

99: 1 — 100: 9 — 101: 9 — 102: 2 — 103: 2 — 104–109: [redacted] — 110–115: [illegible]

100: 2 — 102: 61 — 103: 1 — 104–109: [redacted] — 110–115: 110309

116: 1 — 117: 50 — 119–124: 0506038 / 8 3-05 — 125–130: [illegible] — 131–136: [illegible]

117: 77 — 119–124: 012121 — 125–130: 760109 — 131–136: [illegible]09

137: 1 — [redacted]

138–13: 02 — ΙΔΙΟΣ — ΙΔΙΑ

140–141: 0077 — 142–143: 3 — 140–141: 0395 — YZF — 142–143: 1879

144–148: 1236 — 149–155: [redacted] — 144–148: – – 993 — 149–155: [redacted] — 156–15: 1 –

158–159: 06 — 160–161: 03 — 164: 2 — 165: 1

Α — Β — ΛΕΩΦ. ΓΡΙΒΑ ΔΙΓΕΝΗ

158–159: 03 — 160–161: 01 — 164: 2 — 165: 21

ΟΧ 1 — 162–16: 12 — ΟΧ 2

ΤΟ ΟΧΗΜΑ Α ΑΛΛΑΞΕ ΛΩΡΙΔΑ ΑΠΟ [illegible] ΑΡΙΣΤΕΡΑ [illegible]
ΔΕΞΙΑ ΚΑΙ ΑΝΟΙΞΕ ΤΗΝ ΕΜΠΡΟΣ ΠΟΡΤΑ ΤΟΥ ΟΧΗΜΑΤΟΣ Β
ΜΕΤΑ ΤΟ ΠΡΩΤΟ ΧΤΥΠΗΜΑ ΤΟ ΟΧΗΜΑ Β ΧΤΥΠΗΣΕ ΚΑΙ
ΤΑ ΠΡΟΣΤΑΤΕΥΤΙΚΑ ΚΙΓΚΛΙΔΩΜΑΤΑ.

166–16: 19 — ΟΧ 1 — 168–16: 01 — ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	D1	2	1	1	23	2	8	1	12	4	–	3	[redacted]
2	1	03	2	1	1	29	1	6	5	12	4	–	3	[redacted]
3	2	01	4	2	3	26	1	8	1	06	2	1	1	[redacted]
4														
5														
6														
7														

186: ΝΑ — 187–190: 0935

ΥΠΟΓΡΑΦΗ

191–194: 1330 — 199–202: 1410 — 207–210: 20 — 211: 1

195–198: 1345 — 203–206: 1355 — 212–215: 10

Α 843 — 30.3.09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

T

1	2 3	4 6	7 11
ΛΕΥΚΩΣΙΑΣ	2 1 1	ΤΡΟΧΑΙΑ 2112	00169

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
20	04	09	2	04	20	02	01	1	1	2	1	2	00175	34

39–40: ΛΕΥΚΩΣΙΑ

ΛΕΩΦ ΓΡΙΒΑ ΔΙΓΕΝΗ

41–45: | 46: 1 | 47–48: –

57: ΒΥΡΩΝΟΣ ΠΡΟΔΡΟΜΟΥ

49–51: – – – | 52–54: 024 | 55–56: –

58–60: 063

61–65: M0820 | 66–70: M0819 | 71:

72–74: 020 | 75–76: – – | 77–78: – –

79: 3 | 80: 2 | 81: 9 | 82: 1 | 83: 1 | 84: 1 | 85–87: 050 | 88: 7 | 89: 7

90: 1 4

[redacted]

91

92–97 [redacted]

98: 6

	100	101	102	103	104–109	110–115
A	1	9	2	2	[redacted]	211139
B	2	9	1	2	[redacted]	131050

116: 1

	117	119–124	125–130	131–136
A	50	–50173	271108	261109
B	– –	– – – – – –	– – – –	– – – –

137: 1

[redacted]

ΙΔΙΟΣ

ΙΔΙΑ

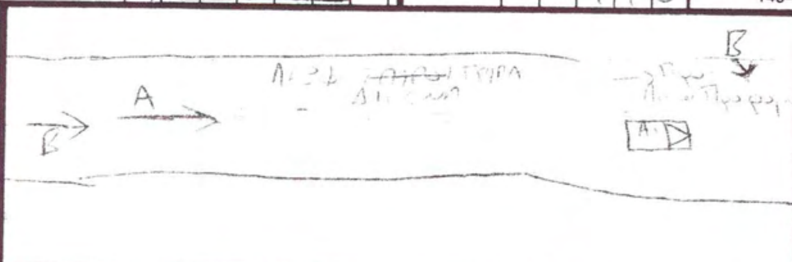
138–13: –

	140–141		142–143	144–148	149–155
A	39	INTEGRA	76	–1596	[redacted]
B	783	RSU1000R	08	– –998	[redacted]

156–15: –

	158–159	160–161	164	165
A	06	04	1	1
B	03	07	1	2

ΟΧ 1 | 162–16: – | ΟΧ 2



ΤΟ ΟΧΗΜΑ Α ΚΙΝΕΙΤΟ ΣΤΗ ΛΕΩΦ ΓΡ ΔΙΓΕΝΗ ΜΕ ΚΑΤΕΥΘΥΝΣΗ ΑΠΟ ΦΙΑ HONDA ΠΡΟΣ ΔΥΤΑ ΜΕΛΑΝ ΚΑΙ Ε ΑΠΟ ΣΤΙΓΜ ΚΑΙ ΣΥΓΚΡΟΥΣΤΗΚΕ ΜΕ ΤΟ ΟΧΗΜΑ Β ΤΟ ΟΠΟΙΟ ΚΙΝΟΥΤΑΝ ΚΑΙ ΑΥΤΟ ΣΤΗΝ ΛΕΩΦΟΡΟ ΚΑΙ ΣΤΗΝ ΙΔΙΑ ΚΑΤΕΥΘΥΝΣΗ

166–167: 01 | ΟΧ 1 | 168–169: 01 | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	19	2	–	1	17	4	–	3	[redacted]
2	1	03	2	1	1	21	1	–	5	08	4	–	3	[redacted]
3	2	01	4	3	1	29	1	–	6	06	2	1	1	[redacted]
4														
5														
6														
7														

186: A | 187–190: A 0235

ΥΠΟΓΡΑΦΗ

191–194: 0421 | 199–202: 0440 | 207–210: 15 | 211: 7

195–198: 0421 | 203–206: 0430 | 212–215: 5

ΑΣ43

22/4/09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 1 1 | 2: ΛΕΥΚΩΣΙΑΣ | 2 3: 0 1 | ΤΡΟΧΑΙΑ | 4–6: 2 1 1 2 | 7–11: 0 0 3 1 6 | T

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
13	06	08	6	15	10	02	01	1	1	2	2	2	00258	77

39–40: ΕΓΚΩΜΗ

ΛΕΩΦ. ΓΡΙΒΑ ΔΙΓΕΝΗ

41–45: | 46: 1 | 47–48:

57: 1

ΟΔΩΝ ΓΡΗΓΟΡΗ ΑΥΞΕΝΤΙΟΥ ΙΑΚΩΒΟΥ ΠΑΤΑΤΣΟΥ

49 – 51: 2 | 52 – 54: 020 | 55–56:

58–60: 059

61–65: JOP03 | 66–70: JO902 | 71: | 72–74: 020 | 75–76: 01 | 77–78:

79: 8 | 80: 1 | 81: 2 | 85 – 87: 050 | 88: 2 | 89: 2

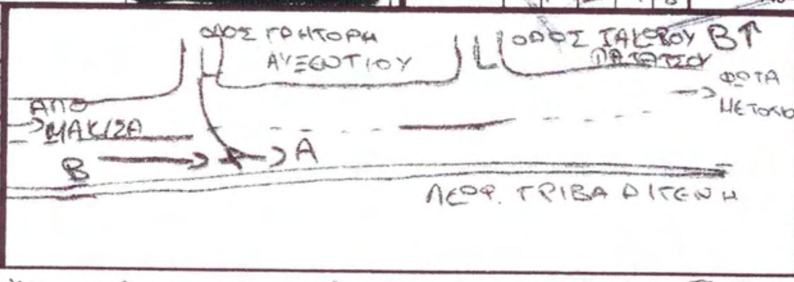
82: 1 | 83: 1 | 84: 1

90: 1

1

91: [redacted]

	Α	Β
	[redacted]	[redacted]
92–97	[redacted]	[redacted]
98		1
100 101	4 2	2 8
102	2	1
103	2	1
104–109	[redacted]	[redacted]
110 – 115	300835	310508
116	1	
117	18	22
119 – 124	470021	114508
125–130	231107	020308
131–136	231108	010308
137	1	
138–139		ΟΗ
	Η ΙΔΙΑ	Ο ΙΔΙΟΣ
	Η ΙΔΙΑ	Ο ΙΔΙΟΣ
140–141	~~00~~ 95	89
	307 XS	X4
142–143	20 04	19 99
144–148	1360	1298
149–155	[redacted]	[redacted]
158–159	06	03
160–161	05	01
164	1	2
165	1	1



ΤΟ ΑΥΤΟΚΙΝΗΤΟ Α ΚΙΝΕΙΤΟ ΣΤΗΝ ~~ΛΕΩΦΟΡΟ~~ ΟΔΟ ΓΡ. ΑΥΞΕΝΤΙΟΥ ΚΑΙ ΜΕ ΚΛΙΣΗ ΑΡΙΣΤΕΡΑ ΕΙΣΗΛΘΕ ΣΤΗΝ ΔΕΞΙΑ ΛΩΡΙΔΑ ΤΗΣ ΛΕΩΦ. ΓΡΙΒΑ ΔΙΓΕΝΗ ΜΕ ΑΠΟΤΕΛΕΣΜΑ ΝΑ ΑΝΑΚΟΨΕΙ ΤΗΝ ΠΟΡΕΙΑ ΤΗΣ ΜΟΤΟΣΥΚΛΕΤΑΣ Β ΠΟΥ ΚΙΝΕΙΤΟ ΗΔΗ ΣΤΗΝ ΔΕΞΙΑ ΛΩΡΙΔΑ ΚΑΙ ΝΑ ΣΥΓΚΡΟΥΣΤΟΥΝ

166–167: 01 (ΟΧ 1) | 168–169: 0Ν (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	42	2	/	5	17	4	/	3	[redacted]
2	2	01	4	3	1	28	1	/	5	06	2	1	1	[redacted]
3														
4														
5														
6														
7														

186: ΑΑ | 187 – 190: 2946

ΥΠΟΓΡΑΦΗ

191 – 194: 1513 | 195 – 198: 1511

199–202: 1535 | 203–206: 1530

207–210: 22 | 211: 2 | 212–215: 19

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1 | 1 | 1 | 2 3: 1 1 | 4–6: 2 1 1 2 | 7–11: 00 2 7 9 | 7

Λ/σια — ΤΡΟΧΑΙΑ

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
26	06	08	6	23	05	02	01	1	1	2	1	2	00 2 9 1	1

39–40: 1

Λ/σια (Έγκωμη)

Γρίβα Διγενή

41–45 | 46: 1 | 47–48: 37

57: 6

Ιάκωβου Πατάτσου Αρχαγγέλου Μιχαήλ

49–51 52–54: 080 | 55–56: +

58–60: 0 59

61–65	66–70	71	72–74	75–76	77–78
J0902	J0901		020	16	+

79	80	81	82	83	84	85–87	88	89
8	1	2	1	1	1	050	2	2

90: 1 4

91

[redacted]

92–97: [redacted] | 92–97: [redacted] | 98: 1

	99	100	101	102	103	104–109	110–115
Α	1	1	9	2	2	[redacted]	070760
Β		46		1	1	[redacted]	170309

116: 1

	117	119–124	125–130	131–136
Α	04	053246	060409	270310
Β	22	130 2000 57009	100408	080410

137: 1 | 138–139: 04

[redacted]

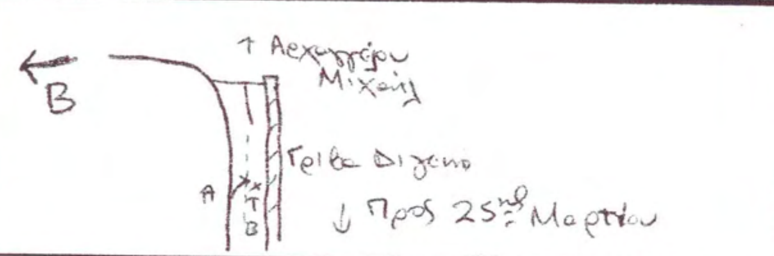
Ίδια | Ίδιος

	140–141		142–143	144–148	149–155
Α	0166	IST	2003	-1298	[redacted]
Β	0220	DARK	2001	-618	[redacted]

156–157: +

	158–159	160–161	164	165
Α	06	05	1	1
Β	03	03	1	2

ΟΧ 1 | 162–163: 12 | ΟΧ 2



Το αυτοκίνητο Α βρισκόταν σε κίνηση στη αριστερή λωρίδα της Γρ. Διγενή Έγκωμη με κατεύθυνση προς Αρχαγγέλου Μιχαήλ και σε κάποιο σημείο άλλαξε λωρίδα και εισερχόμενο στη δεξιά λωρίδα, ανέκοψε την ευθεία πορεία και συγκρούστηκε με τη μοτοσυκλέτα Β που είχε προτεραιότητα. Ο μοτοσικλετιστής λίγο αργότερα υπέκυψε στα τραύματα του στο Γ.Ν. Λ/σιας.

166–167: 14 | ΟΧ 1 | 168–169: 01 | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	19	2	–	1	17	4	–	3	[redacted]
2	2	01	4	3	1	46	1	–	1	06	1	1	1	[redacted]
3														
4														
5														
6														
7														

186 187–190	191–194	199–202	207–210	211	195–198	203–206	212–215
ΓΑ Α 0814	2305	2320	15	9	2305	2310	05

ΥΠΟΓΡΑΦΗ [signature] 814

1 | 1 — ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — 2 3 — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

2 ΛΕΥΚΩΣΙΑΣ | 1 1 | ΤΡΟΧΑΙΑ | 4–6: 2 1 2 | 7–11: 0031Β 7

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
13	07	09	2	14	35	02	01	1	1	2	2	2	00318	23

39–40: 1

ΛΕΥΚΩΣΙΑ/ΕΓΚΩΜΗ

ΛΕΩΦΟΡΟΣ ΓΕΩΡΓΙΟΥ ΓΡΙΒΑ ΔΙΓΕΝΗ.

ΝΙΚΟΥ ΚΡΑΝΙΔΙΩΤΗ — 25ΗΣ ΜΑΡΤΙΟΥ

41–45: | 46: 1 | 47–48: 2~~9~~

49 – 51 | 52 – 54 | 55–56: ~~3~~5

57: 6

ΥΠΕΡΑΓΟΡΑ ΑΛΦΑ ΜΕΓΑ

58–60: 070

61–65: G0801 | 66–70: | 71: | 72–74: 020 | 75–76: 08 | 77–78: +

79: 1 | 80: 2 | 81: 1 | 85 – 87: 050 | 88: 2 | 89: 2

82: 1 | 83: 1 | 84: 1

90: 3 [redacted]

1 [redacted]

91 [redacted] 92–97 [redacted] | [redacted] 92–97 [redacted] | 98: 1

99: 1 | 100–101: 76 | 102: 2 | 103: 2 | 104–109: [redacted] | 110 – 115: 180511 || 100: 59 | 102: 1 | 103: 2 | 104–109: [redacted] | 110 – 115: 281115

116: 1 | 117: 30 | 119–124: ΥΔΡΑ 4461 | 125–130: 080209 | 131–136: 070210 || 117: 98 | 119 – 124: ΑΙ 430002 | 125–130: 241098 | 131–136: 241098

137: 1 [redacted]

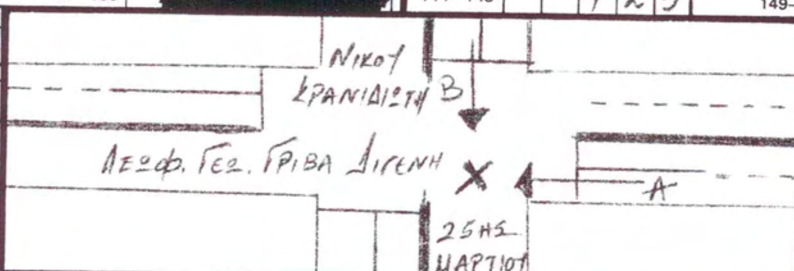
[redacted] | 138–139: 04

140–141: 0189 | CIVIC | 142–143: 94 || 140–141: 1009 | AGILITY CITY 125 | 142–143: 08

144–148: 1343 | 149–155: [redacted] || 144–148: 125 | 149–155: [redacted] | 156–157: +

158–159: 06 | 158–159: 03 | ΟΧ 1

160–161: 08 | 160–161: 07 | 162–163: + | ΟΧ 2



164: 1 | 164: 1

165: 1 | 165: 2

ΤΟ ΑΥΤΟΚΙΝΗΤΟ "Α" ΕΙΣΗΛΘΕ ΕΝΤΟΣ ΤΗΣ ΔΙΑΣΤΑΥΡΩΣΗΣ ΜΕ ΚΟΚΚΙΝΟ ΦΩΣ ΕΝΩ ΕΚΙΝΗΤΟ ΣΤΗΝ ΟΔΟ ΓΡΙΒΑ ΔΙΓΕΝΗ ΚΑΙ ΣΥΓΚΡΟΥΣΤΗΚΕ ΜΕ ΤΗΝ ΜΟΤΟΣΙΚΛΕΤΑ "Β" ΠΟΥ ΕΚΙΝΗΤΟ ΣΤΗΝ ΟΔΟ Ν. ΚΡΑΝΙΔΙΩΤΗ ΜΕ ΚΑΤΕΥΘΥΝΣΗ ΠΡΟΣ ΤΗΝ ΟΔΟ 25ΗΣ ΜΑΡΤΙΟΥ

166–167: 01 | ΟΧ 1 | 168–169: 08 | ΟΧ 2

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	2	1	1	76	2	–	1	17	4	–	3	[redacted]
2	2	01	4	3	3	59	1	–	5	06	2	1	1	[redacted]
3														
4														
5														
6														
7														

186: ΑΑ | 187 – 190: 2640 | 191 – 194: 1450 | 195 – 198: 1440

199–202: 1500 | 203–206: 1450

ΥΠΟΓΡΑΦΗ | ΣΤ. 2640 | 207–210: 10 | 9 | 211 | 212–215: 10 | Π.Σ. 2640 | 16/07/08

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ

ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 2 | 1 | 1
2 3: 1 1

ΛΕΥΚΩΣΙΑΣ — ΤΡΟΧΑΙΑ 2111 — 4 6: 21/2 — 7 11: 00354

12—13	14—15	16—17	18	19—20	21—22	23—24	25—26	27	28	29	30	31	32 36	37—38
11	08	09	3	04	00	01	01	1	1	2	1	2	00363	29

39—40: -

ΛΕΥΚΩΣΙΑ ΕΓΚΩΜΗ

ΛΕΩΦ. ΓΡΙΒΑ ΔΙΓΕΝΗ

41 45 | 46: 1 | 47—48: -

57: 1

Φώτα Κίμων — Φ.Σ.ΤΑ ~~κτηρίου~~ Μιλάνο

49—51 | 52—54: 100 | 55—56: -

58—60: 020

61 65: J0901 — 66 70: L0904 — 71

72—74: 002 | 75—76: 23 | 77—78: 0-

79: 8 | 80: 2 | 81: 1
82: 1 | 83: 1 | 84: 1
85—87: 050 | 88: 2 | 89: 2

90: 1

4

[redacted]

91

[redacted]

92—97 [redacted]

92—97 | 98: 1

99	100 101	102	103	104 109	110—115
1	29	1	2	[redacted]	260360

116: 1

117: 50 ΤΑΡΑ — 119—124: 124371 — 125—130: 260509 — 131—136: 250909

100 | 102 | 103 | 104 | 109 | 110—115 | 117 | 119—124 | 125—130 | 131—136

137: 1

Ο ΙΔΙΟΣ

138—139: 14

140—141: 0189 — CIVIC VTI — 142—143: 96 (1996)

140—141 | 142—143

144—148: 1490 — 149—155: [redacted]

144—148 | 149—155 | 156—157

158—159: 06

160—161: ΚΑΘΕΡΟΣ 01

164: 2

165: 1

Γρίβα Διγενή

Προς Λατσιά — Α — Προς Αγίους Ομολογητές → Λευκωσία

ΟΧ 1 | 158—159 | 162—163 | 160—161 | ΟΧ 2 | 164 | 165

Το όχημα Α κινείτο επί Γρίβα Διγενή από Λ/Λα προς Αγίους Ομολογητές Λευκωσίας. Σε κάποιο σημείο του δρόμου έχασε τον έλεγχο του οχήματος, εκτράπηκε σε ... του αγοραστή και σε ... του Αη...

166—167: 01 | ΟΧ 1 | 168—169 | ΟΧ 2

ΠΡΟ-ΣΩΠ	170	171—172	173	174	175	176—177	178	179	180	181—2	183	184	185	
1	1	01	2	1	1	19	1	6	1	17	2	1	1	[redacted]
2														
3														
4														
5														
6														
7														

186 187 190: ΑΑ1865

ΥΠΟΓΡΑΦΗ: ... 1865

191—194: 0405 — 199—202: 0410 — 207—210: 5

211: 2

195—198: 0405 — 203—206: 0410 — 212—215: 5

18/8/09

ΑΣΤΥΝΟΜΙΑ ΚΥΠΡΟΥ — ΣΤΑΤΙΣΤΙΚΟ ΕΝΤΥΠΟ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

1: 1 | ΛΕΥΚΩΣΙΑΣ | 2–3: 10 | ΤΡΟΧΑΙΑ | 4–6: 2112 | 7–11: 00-426

12–13	14–15	16–17	18	19–20	21–22	23–24	25–26	27	28	29	30	31	32–36	37–38
09	10	09	6	00	30	01	02	1	1	2	1	2	00434	09

40: –

ΛΕΥΚΩΣΙΑ

ΛΕΩΦΟΡΟΣ ΓΡΙΒΑ ΔΙΓΕΝΗ

41–45: | 46: 1 | 47–48: 12

57: 1

Αγ. Προκοπίου — Μετόχιο Κύκκου

49–51: – – – | 52–54: 043 | 55–56: – –

58–60: 6.4

61–65: Τ0901 | 66–70: Κ0904 | 71: | 72–74: 1.6 | 75–76: 22 | 77–78: – –

79: 8 | 80: 2 | 81: 3 | 82: 1 | 83: 1 | 84: 1 | 85–87: 050 | 88: 2 | 89: 2

90: 1 4

[redacted]

91

[redacted] 92–97: [redacted]

100	101	102	103	104	109	110–115
2	5	1	1	[redacted]		300807

16: 1

117: 24 | 119–124: 510 184674 | 125–130: 080909 | 131–136: 070910

137: 1

Ο ΙΔΙΟΣ ΩΣ ΑΝΩ

Η ΙΔΙΑ ΩΣ ΑΝΩ

140–141: 0 | 140–10: 170 GSX-R 1000K3 | 142–143: 2003

144–148: 00988 | 149–155: [redacted]

(Second vehicle) 92–97: | 98: 2 | 100 | 102 | 103 | 104 | 109 | 110–115 | 117 | 119–124 | 125–130 | 131–136 | 138–139: +4 | 140–141 | 142–143 | 144–148 | 149–155 | 156–157: 12

158–159: 03

160–161: 07

164: 2

165: 2

ΟΧ 1 158–159: | 162–163: – – | 160–161: | ΟΧ 2 164: | 165:

Την 09/10/09 και περί ώρα 0030 το όχημα [redacted] οδηγείτο από τον [redacted] στη Λεωφ. Γρίβα Διγενή στη Λ/σια με κατεύθυνση το κέντρο της πόλης έχοντας ως συνεπιβάτη τον [redacted]. Κάτω από άγνωστες συνθήκες ο οδηγός έχασε τον έλεγχο του οχήματος με αποτέλεσμα αυτό να εκτραπεί στα αριστερά του δρόμου και να καταλήξει στην ασφαλτο. Ο συνεπιβάτης τραυματίστηκε ελαφριά και ο οδηγός σοβαρά.

166–167: 01 (ΟΧ 1) | 168–169: – – (ΟΧ 2)

ΠΡΟΣΩΠ	170	171–172	173	174	175	176–177	178	179	180	181–2	183	184	185	
1	1	01	1	3	1	25	1	–	2	06	2	1	1	[redacted]
2	1	01	1	3	1	21	1	–	5	07	1	1	1	[redacted]
3														
4														
5														
6														
7														

186–190: ΕΕ 0812

ΥΠΟΓΡΑΦΗ: Λοχ 812

191–194: 0031 | 195–198: 0027

199–202: 0045 | 203–206: 0035

207–210: 14 | 211: 3 | 212–215: 08

Λοχ 812
16/10/09

F.2. DECODED AND TRANSLATED ROAD CRASH DATA

Automated and translated Road Crash Statistics

ROAD CRASHES STASINOU-SALAMINOS

No.	DATE & TIME																
	Date	Day	Time	Police Time			Ambulance Time				Town	Road Name	Point A	Point B	Closest Junction	Local police authority	Police force
				Notified	Arrived	Time	Notified	Arrived	Time	Notified by							
1	31/03/2007	Saturday	11:00	17:30	/	/	/	/	/	Uknown	Nicosia	Salaminos Ave	S0602	S0603	Larnakos- Solonos Michaelidi	Nicosia	Traffic
2	09/06/2007	Saturday	08:45	08:50	09:10	00:20	/	/	/	Uknown	Nicosia	Salaminos Ave	S0517	S0604	Aigaios	Nicosia	Traffic
3	08/06/2007	Friday	17:10	19:05	19:20	00:15	19:05	19:15	00:10	Passing by	Nicosia	Stasinou Ave	R0703	/	Stasinos Ave., Plateia Makariou B	Nicosia	Traffic
4	07/07/2007	Saturday	18:00	18:05	18:25	00:20	/	/	/	Uknown	Nicosia	Stasinou Ave	S0602	/	Stasinou-Salaminos Ave	Nicosia	Traffic
5	09/07/2007	Monday	22:25	22:30	22:50	00:20	22:25	22:35	00:10	Uknown	Nicosia	Stasinou Ave	P0701	/	Arnaldas	Nicosia	Traffic
6	12/07/2007	Thursday	12:50	12:55	13:10	00:15	/	/	/	Uknown	Nicosia	Stasinou Ave	Q0703	/	Bouboulinas Ave.	Nicosia	Traffic
7	25/07/2007	Wednesday	11:45	11:50	12:00	00:10	/	/	/	Uknown	Nicosia	Stasinou Ave	P0702	P0701	Plateia eleftherias- Salaminos	Nicosia	Traffic
8	08/08/2007	Wednesday	16:30	16:40	16:50	00:10	16:31	16:39	00:08	Uknown	Nicosia	Salaminos Ave	RO701	/	Slaminos Ave- Larnakos ave., Roikou st.	Nicosia	Traffic
9	05/12/2007	Wednesday	13:05	17:30	18:00	00:30	/	/	/	Not notified	Nicosia	Stasinou Ave	P0702	P0701	Plateia eleftherias- arnaldas st.	Nicosia	Traffic
10	24/01/2008	Thursday	09:25	09:30	09:35	00:05	09:30	09:35	00:05	Passing by	Nicosia	Stasinou Ave	P0704	P0705	Omirou-Evagorou- Pl. eleftherias traffic lights	Nicosia	Traffic
11	25/03/2008	Tuesday	16:20	16:25	16:45	00:20	16:25	16:40	00:15	Passing by	Nicosia	Stasinou Ave	P0705	P0704	Arnaldas- Plateia eleftherias	Nicosia	Traffic
12	05/07/2008	Saturday	11:30	11:35	11:45	00:10	/	/	/	Uknown	Nicosia	Stasinou Ave	Q0729	/	Ag. Eleni	Nicosia	Traffic
13	04/09/2008	Thursday	20:15	20:20	20:25	00:05	20:20	20:25	00:05	Passing by	Nicosia	Stasinou Ave	R0715	R0714	Androkleous	Nicosia	Traffic
14	03/12/2008	Wednesday	08:15	08:20	08:30	00:10	08:20	08:25	00:05	Uknown	Nicosia	Stasinou Ave	Q0733	/	Cretis	Nicosia	Traffic
15	17/10/2008	Wednesday	20:45	20:52	21:00	00:08	20:53	20:59	00:06	Passing by	Nicosia	Salaminos Ave	S0608	S0607	Larnakos- B. Michaelidi	Nicosia	Traffic
16	22/03/2009	Sunday	04:10	04:12	04:22	00:10	04:12	04:17	00:05	Uknown	Nicosia	Salaminos Ave	R0710	R0711	Vitonos- Roikou	Nicosia	Traffic
17	30/05/2009	Friday	23:10	23:12	23:22	00:10	23:12	23:16	00:04	Uknown	Nicosia	Stasinou Ave	P0704	/	Evagorou- Pl. Eleftherias	Nicosia	Traffic
18	04/08/2009	Tuesday	12:15	12:20	12:30	00:10	/	/	/	Uknown	Nicosia	Salaminos Ave	R0710	S0609	Stasinou ave-Pouliou Kapota	Nicosia	Traffic

No.	AREA CHARACTERISTICS											
	Road width (m)	Sidewalk/ pagketto width (average width from both sides XX.Xm)	Distance from road length	Movement chart of pedestrians and vehicles	Residential area	Junction type	No. of lanes	Lane separator	Road narrowing	Type of road pavement	Type of road edge Παγκέττου	Speed limit (km/hr)
1	12.4	2	100	Walking or standing on road pavement	Yes	Junction of >=2 lanes	Double	Bidirectional bridge	None	Asphalt	Pedestrian pavement	50
2	14	2	12	Rear end	Yes	No juction	Double	None	None	Asphalt	Pedestrian pavement	50
3	3.5	2	/	From angle	No	Junction of >=2 lanes	Double	None	None	Asphalt	Pedestrian pavement	50
4	14	4.7	/	Overturning in the road pavement	Yes	Junction of >=2 lanes	Double	None	None	Asphalt	Pedestrian pavement	50
5	16	2.5	/	Side (from opposide)	Yes	T junction	Double	None	None	Asphalt	Pedestrian pavement	50
6	12	2.1	/	From angle	Yes	Junction of >=2 lanes	>2 only on junctions	Combination of more than one measures	None	Asphalt	Pedestrian pavement	50
7	14	3	33	Crossing from the left side of the road	Yes	No juction	Double	None	None	Asphalt	Pedestrian pavement	50
8	15.4	1.4	/	Other	No	T junction	Double	Bidirectional bridge	None	Asphalt	Pedestrian pavement	50
9	13.2	2.5	212	Rear end	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50
10	14	2	5	Crossing from the left side of the road	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50
11	14	2	100	Diverting left	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50
12	13.2	2.5	/	From angle	Yes	T junction	Double	None	None	Asphalt	Pedestrian pavement	50
13	13	2	20	Crossing from the right side of the road	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50
14	7.5	2	/	Diagonal departure from right	Yes	T Junction	Double	None	None	Asphalt	Pedestrian pavement	50
15	14.2	2.5	45	Crossing from the left side of the road	Yes	No juction	Double	Traffic lights- Αναλαμπόν Κιτρινο	None	Asphalt	Pedestrian pavement	50
16	15.2	2.8	5	On still object	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50
17	14	2.8	/	Crossing on a pedestrian crossing or junctic	Yes	Junction of >=2 lanes	>2 only on junctions	None	None	Asphalt	Pedestrian pavement	50
18	7.5	3	110	From angle	Yes	No juction	Double	White continuous line	None	Asphalt	Pedestrian pavement	50

No.			CRASH DESCRIPTION												
										Crash information					
No.	Road works (Yes/ NO)	Bus stop (YES/NO)	Crash type	Number of vehicles	Number of casualties	Exchange of names/ addresses (YES/NO)	Did police visit the site (YES /NO)	Abandoned scene (YES/NO)	Pictures taken (YES/NO)	Hit and run (YES/NO)	Crash cause of Veh 1	Crash cause of Veh 2	Crash cause of Veh 3	Crash cause of Veh 4	Pedestrian action
1	NO	NO	Serious Injury	1	1	YES	NO	YES	NO	NO	Careless driving/ Distraction	/	/	/	Crossing road from right not masked from parked or stationary vehicle
2	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Disobeyed to keep safe distance	/	/	/	/
3	NO	NO	Serious Injury	2	2	YES	YES	NO	NO	NO	Careless right turn	/	/	/	/
4	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Careless right turn	/	/	/	/
5	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Careless right turn	/	/	/	/
6	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Careless right turn	/	/	/	/
7	NO	NO	Serious Injury	1	1	YES	YES	NO	NO	NO	Pedestrian crossed careless	/	/	/	Crossing road from right masked from parked or stationary vehicle
8	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Lane change (irregular)	/	/	/	/
9	NO	NO	Serious Injury	2	1	YES	YES	NO	NO	NO	Disobeyed to keep safe distance	/	/	/	/
10	NO	NO	Serious Injury	1	1	YES	YES	NO	YES	NO	Pedestrian crossed careless	/	/	/	Crossing pedestrian crossing
11	NO	NO	Serious Injury	1	3	YES	YES	NO	NO	NO	Careless driving/ Distraction	/	/	/	/
12	NO	NO	Serious Injury	2	2	YES	YES	NO	YES	NO	Disobeyed automatic traffic signal	/	/	/	/
13	NO	NO	Serious Injury	1	1	YES	YES	NO	YES	NO	Careless driving/ Distraction	/	/	/	Crossing road from right not masked from parked or stationary vehicle
14	NO	NO	Serious Injury	1	1	NO	YES	YES	YES	YES	U turn	/	/	/	Crossing road from right masked from parked or stationary vehicle
15	NO	NO	Fatal	1	2	NO	YES	NO	YES	NO	Pedestrian crossed careless	/	/	/	Crossing road from right masked from parked or stationary vehicle
16	NO	NO	Serious Injury	1	2	YES	YES	NO	YES	NO	Overtaking from right (irregular)	/	/	/	/
17	NO	NO	Serious Injury	1	1	NO	YES	NO	NO	YES	Careless driving/ Distraction	/	/	/	Crossing pedestrian crossing
18	NO	NO	Serious Injury	3	1	YES	YES	NO	NO	NO	Careless right turn	/	/	/	/

No.							Vehicle						
No.	Traffic control measures	Pedestrian crossing measures	Light conditions	Road description	Road surface condition	Weather	Vehicle location at time of accident	Crash type			Vehicle movement before crash		
								Cause 1	Cause 2				
									Veh 1	Veh 2	Vehicle 1	Vehicle	Vehicle
1	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
2	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Bicyclist	/	/	Straight	Staight	/
3	Traffic lights	Pedestrian phase at traffic signal	Daylight	Straight and flat	Dry	Fine w/out high winds	/	From angle	/	/	Right turn	Staight	/
4	Traffic lights	None	Daylight		Dry	Fine w/out high winds	/	Other	/	/	Right turn	Staight	/
5	None	None	Darkness: street light present	Straight and flat	Dry	Fine w/out high winds	/	Side	/	/	Straight	Staight	/
6	Traffic lights	None	Daylight		Dry	Fine w/out high winds	/	Side	/	/	Right turn	Staight	/
7	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds	/	Pedestrian	/	/	Straight	/	/
8	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds	/	From angle	/	/	Lane change	Staight	/
9	None	None	Daylight	Straight and flat	Wet	Rain/ hail	/	Rear-end	/	/	Straight	Staight	/
10	Traffic lights	Pedestrian phase at traffic signal	Daylight	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
11	None	None	Daylight	Turn and flat	Dry	Fine w/out high winds	On main carriageway	Other fixed object	/	/	Straight	/	/
12	STOP sign	None	Daylight	Straight and flat	Dry	Fine w/out high winds	/	From angle	/	/	Right turn	Staight	/
13	None	None	Darkness: street light present	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
14	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
15	None	None	Darkness: street light present	Turn and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
16	None	None	Darkness: street light present	Turn and flat	Dry	Fine w/out high winds	On main carriageway	/	Tree	/	Overtaking	/	/
17	Traffic lights	Pedestrian phase at traffic signal	Darkness: street light present	Straight and flat	Dry	Fine w/out high winds	On main carriageway	Pedestrian	/	/	Straight	/	/
18	/	None	Daylight	Straight and flat	Dry	Fine w/out high winds	/	From angle	/	Ped paveme	Right turn	Staight	Parked

No.	Driver and vehicle																
	Age	Sex	Type of driving licence	Expiry date of driving licence	Insurance company	Certificate issue (date)	Certificate expiry date	Vehicle owner	Address	Vehicle brand	Vehicle model	Year of veh manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
1	43	Female	Learners	08/03/2005	Pancyprian Insurance Company	06/02/2007	31/05/2007	/	/	189	Integra	1995	1590	SALOON Car	Front	Yes	Yes
2	73	Male	Normal	25/12/2008	OLYMPIC	07/08/2006	06/08/2007	Driver	Same	45	/	1968	500	SALOON Car	Front	Yes	Yes
3	38	Female	Normal	24/04/2034	Minerva insurance company	/	/	/	/	1320	/	2000	1320	SALOON Car	Left door	Yes	Yes
4	45	Male	Normal	08/02/2032	IDRA	09/03/2007	09/03/2008	Driver	Same	166	/	1994	1760	SALOON Car	None	Yes	Yes
5	26	Male	Learners	19/09/2008	Minerva insurance company	05/03/2007	04/09/2007	Driver	Same	Yamaha	Motorcycle	1995	748	Motorcycle (>=50cc)	Front	Yes	Yes
6	51	Male	Normal	11/07/2026	Cosmos (cyprus) insurance	03/04/2007	02/04/2008	/	/	210	/	2003	1994	SALOON Car	Rear right wing	Yes	Yes
7	25	Male	Normal	10/08/2016	Atlantic insurance	23/08/2006	23/08/2007	/	/	533	/	2002	1343	SALOON Car	Front left wing	Yes	Yes
8	80	Male	Normal	10/06/2008	Pancyprian Insurance Company	02/09/2006	01/09/2007	Driver	Same	395	/	1991	49	Motorcycle (<50cc)	Left door	Yes	Yes
9	23	Female	Normal	22/04/2054	Laiki Insurance ltd	27/07/2007	19/07/2008	/	/	166	/	1999	990	SALOON Car	Front	Yes	Yes
10	60	Male	Normal	16/03/2009	Κοινοπραξία Ασφαλιστών	11/01/2008	10/04/2008	/	/	77	/	1987	2497	Taxi	Front left wing	Yes	Yes
11	17	Female	NO	/	/	/	/	/	/	533	/	2003	1343	SALOON Car	Front left wing	Yes	Yes
12	34	Male	Learners	10/07/2009	OLYMPIC	01/08/2007	31/07/2008	/	/	170	A/CYCLE	1996	49	Motorcycle (<50cc)	Right door	Yes	Yes
13	19	Male	Normal	11/01/2059	/	23/10/2007	23/10/2008	Driver	Same	533	/	1992	1298	SALOON Car	Front	Yes	Yes
14	21	Male	NO	/	/	/	/	/	/	166	/	1996	1990	SALOON Car	Front	No	No
15	28	Male	Normal	31/12/2049	Cosmos (cyprus) insurance	03/03/2008	07/03/2009	Driver	Same	224	/	1999	1308	SALOON Car	Front	Yes	Yes
16	28	Male	Normal	15/12/2050	Cosmos (cyprus) insurance	26/04/2008	25/04/2009	/	/	217	A3	2001	1595	SALOON Car	Front	Yes	Yes
17	24	Male	/	/	/	/	/	/	/	45	123	1985	1299	SALOON Car	Front	Yes	Yes
18	66	Male	Normal	10/10/2013	Minerva insurance company	08/07/2009	07/07/2010	/	/	104	/	2008	1461	SALOON Car	Front right wing	Yes	Yes

VEHICLE 1

No.	Occupant 1										
	Vehicle traveling	Position in vehicle	Helmet- Seatbelt	Ejected from vehicle	Nationality	Age	Sex	Drugs and alcohol	Position of people involved	Seriousness of injuries	Transportation to hospital	Hospital
1	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	43	Female	Not requested	Saloon car driver	None	/	None
2	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	73	Male	Not requested	Saloon car driver	None	/	None
3	Vehicle no. 1	Driver	Seatbelt	Did not eject	Other	38	Female	Not requested	Saloon car driver	None	/	None
4	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	45	Male	Not requested	Saloon car driver	None	/	None
5	Vehicle no. 1	Driver	M/cycle helmet	Partially ejected	Other	26	Male	Not requested	Motorcycle driver	Serious	Ambulance of Min. of heal	Public
6	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	51	Male	Not requested	Saloon car driver	None	/	None
7	Vehicle no. 1	Driver	M/cycle helmet	Did not eject	Other	25	Female	Not requested	Saloon car driver	None	/	None
8	Vehicle no. 1	Driver	Uknown	Partially ejected	Cypriot	80	Male	Not applicable	Motorbike driver	Serious	Ambulance of Min. of heal	Public
9	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	23	Female	Not requested	Saloon car driver	None	/	None
10	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	60	Male	Negative	Taxi driver	None	/	None
11	Vehicle no. 1	Driver	Seatbelt	Did not eject	Other	17	Female	Negative	Saloon car driver	Minor	Ambulance of Min. of heal	Public
12	Vehicle no. 1	Driver	M/cycle helmet	Ejected	Cypriot	34	Male	Not requested	Motorcycle driver	Minor	Ambulance of Min. of heal	Public
13	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	19	Male	Negative	Saloon car driver	None	/	None
14	Vehicle no. 1	Driver	Seatbelt	Did not eject	Other	20	Male	Negative	Saloon car driver	None	/	None
15	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	28	Male	Negative	Saloon car driver	Minor	Ambulance of Min. of heal	Public
16	Vehicle no. 1	Driver	None	Did not eject	Cypriot	28	Male	Not requested	Saloon car driver	Serious	Ambulance of Min. of heal	Public
17	Vehicle no. 1	Driver	Seatbelt	Did not eject	Other	24	Male	Negative	Saloon car driver	None	/	None
18	Vehicle no. 1	Driver	Seatbelt	Did not eject	Cypriot	66	Male	Negative	Saloon car driver	None	/	None

No.	Occupant 2											
	Vehicle travelling in	Position in vehicle	Helmet-Seatbelt	Ejected from vehicle	Nationality	Age	Sex	Alcohol and drugs	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1												
2												
3	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Other	19	Woman	Not requested	Saloon car passenger	Minor	Other	Public
4												
5												
6												
7												
8												
9												
10												
11	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Other	18	Woman	Not requested	Saloon car passenger	Serious	Ambulance of Min. of health	Public
12												
13												
14												
15												
16	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Cypriot	24	Woman	Not requested	Saloon car passenger	Serious	Ambulance of Min. of health	Public
17												
18												

No.	VEHICLE 1												
	Occupant 3												
	Vehicle traveling in	Position in vehicle	Helmet-Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Σώμα Ασφαλείας	Alcohol and drugs	Ιδιότητα ενεχωμένων	Seriousness of injuries	Transport to hospital	Hospital
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11	Vehicle no. 1	Passenger-rear right	Seatbelt	Was not ejected	Άλλη	19	Female	/	Not requested	Saloon car passe	Minor	Ambulance of Min. of health	Public
12													
13													
14													
15													
16													
17													
18													

No.	VEHICLE 2 Driver and Vehicle Age	Sex	Type of driving licence	Driving licence expiry date	Insurance company	Certificate issue date	Certificate expiry date	Vehicle owner	Address	Vehicle brand	vehicle model	Year of manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
1	62	Female	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	69	Male	/	/	/	/	/	/	/	/	/	/	/	Bicycle	Rear left wing	/	/
3	30	Male	NO	/	/	/	/	/	/	170	/	1979	49	Motorcycle (<=49cc)	Front	No	Yes
4	26	Male	Normal	17/03/2051	Minerva Insurance Company	20/02/2007	25/02/2008	same	same	77	/	1995	2295	SALOON Car	Front	Yes	Yes
5	43	Male	Normal	18/06/2034	Cosmos (cyprus) insurance	26/06/2007	25/10/2007	same	same	Toyota	Saloon	1998	/	SALOON Car	Rear right wing	Yes	Yes
6	52	Male	Learner	03/11/2007	Pancyprian Insurance company	19/07/2007	18/07/2008	/	/	170	/	1991	199	Motorcycle (>=50cc)	Front	Yes	Yes
7	52	Male	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
8	23	Female	Normal	25/03/2054	Minerva Insurance Company	19/04/2007	18/08/2007	same	same	124	Golf	2004	1390	SALOON Car	Right door	Yes	Yes
9	23	Male	Normal	21/11/2054	General Insurance company of cy	28/09/2007	27/09/2008	/	/	125	/	2007	1598	SALOON Car	Back	Yes	Yes
10	70	Female	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11																	
12	28	Male	Learner	14/07/2008	Cosmos (cyprus) insurance	27/06/2008	26/06/2009	same	same	170	/	2007	385	Motorcycle (>=50cc)	Front	Yes	Yes
13	33	Male	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
14	73	Female	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15	18	Male	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
16																	
17	22	Male	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
18	24	Male	Normal	05/07/2010	/	/	/	/	/	395	/	2003	998	Motorcycle(>=50)	Front	Yes	No

No.	VEHICLE 2 Occupant 1 Vehicle travelling in	Poisition in vehicle	Helmet- Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Drugs and Alcohol	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
2	Vehicle no. 2	Driver	None	Ejected	Cypriot	69	Male	Not requested	Bicyclist	Serious	Ambulance of Min. of health	Public
3	Vehicle no. 2	Driver	M/cycle helmet	Unknown	Other	30	Male	Not requested	Motorbike driver	Serious	Ambulance of Min. of health	Public
4	Vehicle no. 2	Driver	Seatbelt	Was not ejected	Cypriot	26	Male	Not requested	Saloon car driver	Serious	Ambulance of Min. of health	Public
5	Vehicle no. 2	Driver	Seatbelt	Was not ejected	Other	43	Male	Not requested	Saloon car driver	None	No	No
6	Vehicle no. 2	Driver	M/cycle helmet	Partially ejected	Cypriot	52	Male	Not requested	Motorcycle driver	Serious	Ambulance of Min. of health	Public
7	Pedestrian	/	/	/	Cypriot	52	Male	/	Pedestrian	Serious	Ambulance of Min. of health	Public
8	Vehicle no. 2	Driver	Seatbelt	Was not ejected	Cypriot	23	Female	Negative	Saloon car driver	None	No	None
9	Vehicle no. 2	Driver	Seatbelt	Was not ejected	Cypriot	23	Male	Not requested	Saloon car driver	None	/	None
10	Pedestrian	/	/	/	Cypriot	70	Female	Negative	Pedestrian	Serious	Ambulance of Min. of health	Public
11												
12	Vehicle no. 2	Driver	M/cycle helmet	Ejected	Cypriot	28	Male	Not requested	Motorbike driver	Serious	Ambulance of Min. of health	Public
13	Pedestrian	/	/	/	Other	33	Male	Not requested	Pedestrian	Serious	Ambulance of Min. of health	Public
14	Pedestrian	/	/	/	Other	73	Female	Negative	Pedestrian	Serious	Ambulance of Min. of health	Public
15	Pedestrian	/	/	0	Other	18	Male	Uknown	Pedestrian	Fatal	Ambulance of Min. of health	Public
16												
17	Pedestrian	/	/	/	Other	22	Male	Not requested	Pedestrian	Serious	Ambulance of Min. of health	Public
18	Vehicle no. 2	Driver	M/cycle helmet	Ejected	Cypriot	24	Male	Uknown	Motorbike driver	Serious	Ambulance of Min. of health	Public

No.	VEHICLE 2 Occupant 2												
	Vehicle travelling in	Position in vehicle	Helmet-Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Σώμα Ασφαλείας	Drugs and alcohol	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1													
2													
3													
4													
5													
6													
7													
8													
9	Vehicle No. 2	Co-driver	Seatbelt	Was not ejected	Cypriot	57	Female	/	Not requested	Saloon car pa	Serious	Other vehicle	Private clinic
10													
11													
12													
13													
14													
15													
16													
17													
18													

No.	VEHICLE 3 Vehicle and driver															
	Sex	Type of driving licence	Date of expiry day of licence	Insurance company	Certificate issue (date)	Certificate expiry date	Car owner	Address	Vehicle brand	Vehicle model	Year of manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18	Male	Normal	28/12/2035	Minerva insurance company	/	/	/	/	411	/	2007	1598	SALOON Car	Left front wing	Yes	Yes

No.	Vehicle 3												
	Occupant 1												
	Vehicle travelling in	Position in vehicle	Helmet-Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Σώμα Ασφαλείας	Drugs and alcohol	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18	Vehicle no. 3	/	/	/	Cypriot	42	Male	/	Not requested	Saloon car driver	None	/	None

No.	Description
1	Το αυτοκίνητο Α εξερχόμενο από το πιο πάνω πρατήριο βενζίνης (πετρολίνα) χτίπησε την πεζή Β, που διέσχιζε το δρόμο από τα αριστερά, προς τα δεξιά του αυτοκινήτου (μπροστά του)
2	Vehicle No. 2 hit bicycle no 1 from behind
3	Vehicle A turned to the right and crashed with vehicle B which was moving straight
4	Whilst vehicle 1 was trying to turn right troubled vehicle 2 which was coming from the opposite direction, so veh 2 moved to the left to avoid veh 1. As a result vehicle 2 went on the road pavement and hit a sign post and then a tree.
5	Motorcycle A entered the oposite stream and hit on vehicle B
6	A initiated with a right inclination and cut the movement of B
7	Vehicle no. 1 was moving on the road pavement and hit pedestrian no 2 who was crossing the road outside the pedestrian crosing
8	Moped A moving on the right lane in Salaminos avenue toward OHI, changed lane and hit vehicle B
9	Vehicle A hit the back of of vehicle B which was stopped because of traffic
10	Whilst vehicle A was moving in Stasinou from the traffic lights of platia eleftherias towards Pallouriotissa, hit and dragged the pedestrian who was crossing the road from the left to the right side, like the movement of A
11	Vehicle A was moving in Stasinou avenue. At some point, it came ou of its way towards the left, and as a result it hit the construction site fencing.
12	Vehicle 1 entered the main road from an intersection and crashed with vehicle no 2 which was moving in the main road
13	Vehicle A dragged and injured the pedestrian who was crossing the road from left, like the movement of vehicle A
14	Vehicle A dreagged and serously injured pedestrian B who was crossing the road from the right, like A's movement
15	Vehicle no 1 dragged and fatally injured pedestrian who was crossing the avenue from left to the right, of vehice's movement. Vehicle no 1 had minor injuries.
16	Vehicle no 1, under sonditions that are being investigated, came to the oposite lane to overtake the vehicle in front. The driver lost control of the vehicle and after he cut atraffic sig he hit a tree and stopped.
17	Vehicle no 1 came from an one way intersection and hit the pedestrian who was crossing from the left to the right of the way of the vehicle
18	Vehicle 1 was moving in Salaminos avenue towards Pouliou Kapota. At some point he tried to turn right and as a result he hit motorcycle B which moved to the left and hit vehicle C

LEOF. GEORGIOU GRIVA DIGENI

No.	DATE & TIME: Date	Day	Time	Police Time: Notifie	Arrive	Tim	Ambulance Time: Notifie	Arrive	Tim	Notified b	Town	Road Name	Point A	Point B	Closest Junction	Local police authority	Police force	Road width (m)	Sidewalk/ pagketto width (average width from both sides XX.Xm)
1	17/03/2007	Saturday	20:55	20:58	21:10	00:12	20:55	21:03	00:08	Passing by	Nicosia	Griva Digeni	F0802	F0801	Kapsali-Papachristoforou-Hilton Park	Nicosia	Traffic	14	2
2	28/06/2007	Thrusday	06:00	06:00	06:10	00:10	06:00	06:12	00:12	Police	Nicosia	Griva Digeni	F0803	/	Achaion-28th Octovriou-Opposite TOYOTA	Nicosia	Traffic	5.9	2
3	24/09/2007	Tuesday	19:00	19:00	19:30	00:30	/	/	/	Police	Nicosia	Griva Digeni	M0803	/	Lordou Vyronos- Ag. Omologiton	Nicosia	Traffic	8.6	2
4	04/09/2007	Tuesday	00:10	00:10	00:25	00:15	00:10	00:20	00:10	Implicated	Nicosia	Griva Digeni	K0901	/	Stasinou st.	Nicosia	Traffic	12.5	2.4
5	14/01/2008	Monday	14:00	14:05	14:15	00:10	14:05	14:08	00:03	Passing by	Nicosia	Griva Digeni	E0804	/	28is Octovriou	Nicosia	Traffic	13	2
6	30/01/2008	Wednesday	16:30	16:30	16:45	00:15	16:30	16:40	00:10	Passing by	Nicosia	Griva Digeni	M0820	/	Lordos Vyronos	Nicosia	Traffic	8.2	2.2
7	05/04/2008	Saturday	10:30	10:30	10:45	00:15	10:30	10:40	00:10	Passing by	Nicosia	Griva Digeni	N0925	N0809	D. Severi- Kyriakou Matsi	Nicosia	Traffic	17.4	2
8	27/05/2008	Tuesday	15:55	15:56	16:10	00:14	15:57	16:05	00:08	Unknown	Nicosia	Griva Digeni	J0902	J0901	Iakovou Patatsou- Archangelou Ave.	Nicosia	Traffic	6.1	3.3
9	01/12/2008	Monday	07:50	07:50	08:00	00:10	07:50	08:10	00:20	Unknown	Nicosia	Griva Digeni	K0904	/	Stasinou st.	Nicosia	Traffic	14	1.8
10	14/12/2008	Saturday	18:45	18:45	18:55	00:10	18:45	18:55	00:10	Implicated	Nicosia	Griva Digeni	N0925	/	Leof. D. Severi	Nicosia	Traffic	6.7	2.5
11	22/03/2009	Sunday	13:40	13:50	14:10	00:20	13:45	13:55	00:10	Implicated	Nicosia	Griva Digeni	G0801	H0901	25is Martiou-Leof. Archangelou	Nicosia	Traffic	6	1.8
12	20/04/2009	Monday	04:20	04:25	04:40	00:15	04:25	04:30	00:05	Unknown	Nicosia	Griva Digeni	M0820	M0819	Vyronos-Prodromou	Nicosia	Traffic	6.8	2
13	13/06/2009	Friday	15:10	15:13	15:35	00:22	15:11	15:30	00:19	Passing by	Nicosia	Griva Digeni	J0903	J0902	Gregori Avxentiou-Iakovou Patatsou	Nicosia	Traffic	5.9	2
14	26/06/2009	Friday	23:05	23:05	23:20	00:15	23:05	23:10	00:05	Unknown	Nicosia	Griva Digeni	J0902	J0901	Iakovou Patatsou- Archangelou Ave.	Nicosia	Traffic	5.9	2
15	13/07/2009	Monday	14:35	14:50	15:00	00:10	14:40	14:50	00:10	Unknown	Nicosia	Griva Digeni	G0801	/	Nikou Kranidioti- 25is Martiou	Nicosia	Traffic	7	2
16	11/08/2009	Tuesday	04:00	04:05	04:10	00:05	04:05	04:10	00:05	Passing by	Nicosia	Griva Digeni	J0901	K0904	Kikkou Traffic lights-Milano Traffic lights	Nicosia	Traffic	2	0.2
17	09/10/2009	Friday	00:30	00:31	00:45	00:14	00:27	00:35	00:08	Police	Nicosia	Griva Digeni	J0902	K0905	Ag. Prokopiou- Metohio Kykkou	Nicosia	Traffic	6.4	1.6

No.	AREA CHARACTERISTICS: Distance from road length (m)	Movement chart of pedestrians and vehicles	Residential area	Junction type	No. of lanes	Lane separator	Road narrowing	Type of road pavement	Type of road edge Παγκέττου	Speed limit (km/hr)	Road works (Yes/NO)	Bus stop (YES/NO)
1	42	On still item	Yes	No junction	Double	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
2	60	On still item	Yes	No junction	Single	Dashed line	None	Asphalt	Ped pavement	50	No	No
3	/	Crossing on a pedestrian crossing or j	Yes	Junction of >=2 lanes	>2 only on junctions	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
4	/	Pedestrian- angular	Yes	T junction	Double	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
5	/	Angular	Yes	T junction	Single	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
6	37	Angular	Yes	Junction of >=2 lanes	Double	None	None	Asphalt	Ped pavement	50	No	No
7	6	Crossing on a pedestrian crossing or j	Yes	Junction of >=2 lanes	>2 only on junctions	None	None	Asphalt	Ped pavement	50	No	No
8	6	Angular	Yes	No junction	Single	Dashed line	None	Asphalt	Ped pavement	50	No	No
9	/	Angular	Yes	T junction	Double	Solid line	None	Asphalt	Ped pavement	50	No	No
10	/	Angular	Yes	Junction of >=2 lanes	Double	None	None	Asphalt	Ped pavement	50	No	No
11	90	Overturning in road pavement	Yes	No junction	Double	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
12	24	/	Yes	No junction	Double	Combination of more than one measures	None	Asphalt	Ped pavement	50	No	No
13	20	Angular	Yes	No junction	Single	Dashed line	None	Asphalt	Ped pavement	50	No	No
14	80	Angular	Yes	No junction	Single	Dashed line	None	Asphalt	Ped pavement	50	No	No
15	/	Angular	Yes	Junction of >=2 lanes	Double	None	None	Asphalt	Ped pavement	50	No	No
16	100	Diverted right	Yes	No junction	Double	None	None	Asphalt	Ped pavement	50	No	No
17	40	Diverted left	Yes	No junction	Double	Solid line	None	Asphalt	Ped pavement	50	No	No

No.	CRASH DESCRIPTION — Crash Information: Crash type	No. of vehicles	Number of casualties	Exchange of names/ addresses (YES/NO)	Did police visit the site (YES /NO)	Abandoned scene (YES/NO)	Pictures taken (YES/NO)	Hit and run (YES/NO)	Crash cause of Veh 1	Crash cause of Veh 2	Crash cause of Veh 3
1	Fatal	3	1	Yes	Yes	No	Yes	No	Exceeding speed limit	Illegal direction of travel	Careless driving/ distraction
2	Fatal	1	1	No	No	Yes	No	Yes	Exceeding speed limit	/	/
3	Serious Injury	1	2	Yes	Yes	Yes	No	No	Careless driving/ Distraction	/	/
4	Serious Injury	2	1	Yes	Yes	No	Yes	No	Failure to give right of way	/	/
5	Serious Injury	3	1	Yes	Yes	No	Yes	No	Disobeyed automatic traffic signal	/	/
6	Serious Injury	2	1	Yes	Yes	No	No	No	Disobeyed automatic traffic signal	/	/
7	Serious Injury	1	1	Yes	Yes	No	No	No	Careless driving/ Distraction	/	/
8	Serious Injury	3	1	Yes	Yes	No	No	No	Illegal direction of travel	/	/
9	Serious Injury	2	2	Yes	Yes	No	No	No	Careless turn to the right (manouevring)	/	/
10	Serious Injury	2	1	Yes	Yes	No	Yes	No	Disobeyed automatic traffic signal	/	/
11	Serious Injury	2	1	Yes	Yes	No	No	No	Illegal direction of travel	/	/
12	Serious Injury	2	1	Yes	Yes	No	Yes	No	Careless driving/ Distraction	/	/
13	Serious Injury	2	1	Yes	Yes	No	No	No	Failure to give right of way	/	/
14	Fatal	2	1	Yes	Yes	No	Yes	No	Illegal direction of travel	/	/
15	Serious Injury	2	1	Yes	Yes	No	No	No	Disobeyed automatic traffic signal	/	/
16	Serious Injury	1	1	Yes	Yes	No	Yes	No	Careless driving/ Distraction	/	/
17	Fatal	1	2	Yes	Yes	No	Yes	No	Exceeding speed limit	/	/

No.	CRASH DESCRIPTION — Crash Information: Pedestrian action	Traffic control measures	Pedestrian crossing measures	Light conditions	Road description	Road surface condition	Weather
1	/	None	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds
2	/	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds
3	Crossing road from right not masked from parked or stationary veh.	Traffic lights	None	Dask	Turn and flat	Dry	Fine w/out high winds
4	/	None	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds
5	/	Traffic lights	None	Daylight	Straight and flat	Dry	Fine w/out high winds
6	/	Traffic lights	None	Daylight	Straight and flat	Dry	Fine w/out high winds
7	Crossing road from right not masked from parked or stationary veh.	Traffic lights	Pedestrian phase at traffic signal	Daylight	Straight and flat	Dry	Fine w/out high winds
8	/	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds
9	/	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds
10	/	Traffic lights	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds
11	/	/	None	Daylight	Straight and flat	Dry	Fine w/out high winds
12	/	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds
13	/	None	None	Daylight	Straight and flat	Dry	Fine w/out high winds
14	/	Traffic lights	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds
15	/	Traffic lights	Pedestrian phase at traffic signal	Daylight	Straight and flat	Dry	Fine w/out high winds
16	/	None	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds
17	/	None	None	Darkness: street lights present	Straight and flat	Dry	Fine w/out high winds

No.	Vehicle location at time of crash	Crash type: Reason 1	Crash type: Reason 2 Veh 1	Crash type: Reason 2 Veh 2	Vehicle movement before crash: Veh 1	Vehicle movement before crash: Veh 2	Vehicle movement before crash: Veh 3
1	On main carriageway	Extreme protective barrier	/	/	Straight	Straight	Straight
2	On main carriageway	Other object in carriageway	Lamp/Electricity pole	/	Straight	/	/
3	On main carriageway	Pedestrian	/	/	Right turn	/	/
4	On main carriageway	Angular	/	/	Straight	Right turn	/
5	On main carriageway	Angular	Overturn on road pavement	/	Right turn	Straight	/
6	On main carriageway	Angular	/	/	Straight	Straight	/
7	On main carriageway	Pedestrian	/	/	Right turn	/	/
8	On main carriageway	Angular	/	/	Changing lane	Straight	Straight
9	On main carriageway	Angular	/	/	Right turn	Straight	/
10	On main carriageway	Side collision with other veh	/	/	Straight	Straight	/
11	On main carriageway	Side collision with other veh	Rear-end	Median road safety barrier	Pedestrian	Straight	/
12	On main carriageway	/	/	/	Straight	Straight	/
13	On main carriageway	Angular	/	/	Straight	Straight	/
14	On main carriageway	Angular	/	Median road safety barrier	Changing lane	Straight	/
15	On main carriageway	Angular	/	/	Straight	Waiting to go ahead but stopped because of traffic	/
16	On main carriageway	Ped pavement	/	/	Straight	/	/
17	Outside main carriageway	/	/	/	Straight	/	/

Table heading: CRASH DESCRIPTION — Vehicle

Vehicle 1 — Driver and vehicle

No.	Age	Sex	Type of driving licence	Expiry date of driving licence	Insurance company	Certificate issue (date)	Certificate expiry date	Vehicle owner	Address	Vehicle brand	Vehicle model	Year of veh manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
1	23	Male	Learner	29/02/2008	Interlife	01/03/2007	29/02/2008	ίδιος	ίδια	HAYABUSA	170	2002	1298	Μοτοσυκλέττα (>	Μπροστινό μέρος	Ναι	Ναι
2	21	Male	NO	/	/	/	/	/	/	CIVIC	189	1995	1790	SALOON Car	Front right wing	Yes	Yes
3	64	Male	Normal	31/11/2012	/	26/07/2007	25/11/2007	/	/	FIT	189	2004	1339	SALOON Car	None	Yes	Yes
4	23	Female	/	/	/	/	/	Same	Same	BICYCLE	/	/	/	Ποδήλατο	Front right wing	/	/
5	22	Male	Learner	11/11/2008	General Insurance Company	07/04/2007	06.04/2008	/	/	/	987	2003	49	M/Cycle (<50cc)	Right door	Yes	Yes
6	20	Male	NO	/	/	/	/	/	/	/	311	1993	1396	SALOON Car	Front	Yes	Yes
7	29	Female	Normal	22/08/2048	LAIKI INSURANCE	01/10/2007	01/10/2008	/	/	/	941	2003	995	SALOON Car	Rear right wing	Yes	Yes
8	43	Male	Learner	04/02/2009	MINERVA INSURANCE	05/05/2008	04/09/2008	Same	Same	D10	2189	1991	49	M/Cycle (<50cc)	Front	Yes	Yes
9	19	Female	Normal	13/05/2059	KENTRIKI INSURANCE COMPANY	18/01/2008	17/01/2009	/	/	MARCH	411	2003	1240	SALOON Car	Front	Yes	Yes
10	40	Male	Normal	09/06/2039	/	25/04/2008	25/04/2009	/	/	MX6	224	1993	1990	SALOON Car	Front	Yes	Yes
11	29	Female	Normal	20/04/2056	/	11/02/2009	10/02/2010	/	/	/	77	/	1280	SALOON Car	Right door	No	Yes
12	19	Female	Normal	21/01/2059	/	27/11/2008	26/11/2009	/	/	iNTEGRA	189	1996	1590	SALOON Car	Rear right wing	Yes	Yes
13	42	Female	Normal	30/08/2035	LAIKI INSURANCE	02/03/2008	01/03/2008	Same	Same	JO7X5	95	2004	1360	SALOON Car	Rear	Yes	Yes
14	19	Female	Normal	07/07/2060	ATLANTIC INSURANCE	06/04/2009	27/03/2010	/	/	1ST	166	2003	1298	SALOON Car	Rear	Yes	Yes
15	76	Female	Normal	18/05/2011	YDRA	08/02/2009	07/02/2010	/	/	CIVIC	189	1994	1343	SALOON Car	Front left wing	Yes	Yes
16	19	Male	Normal	26/03/2060	YDRA	26/05/2009	25/09/2009	Same	Same	CIVIC	189	1996	1490	SALOON Car	Front- Total loss	No	Yes
17	25	Male	Learner	30/08/2007	PANCYPRIAN INSURANCE COMPA	08/09/2009	07/09/2010	Same	Same	GSX-R 1000K3	170	2003	988	M/Cycle (>=50cc)	Left door	No	No

No.	Vehicle 1											
	Occupant 1											
	Vehicle traveling	Position in vehicle	Helmet- Seatbelt	Ejected from vehicle	Nationality	Age	Sex	Drugs and alcohol	Position of people involved in vehicle	Seriousness of injuries	Transportation to hospital	Hospital
1	Vehicle no. 1	Driver	M/cycle helmet	Ejected	Cypriot	23	Male	Negative	Motorcycle driver	Fatal	Ambulance of Min. of health	Public
2	Vehicle no. 1	Driver	Seatbelt	Partially ejected	Other	21	Male	Not requested	Saloon car driver	Fatal	Ambulance of Min. of health	Public
3	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	64	Male	Not requested	Saloon car driver	None	/	None
4	Vehicle no. 1	Driver	Bicycle helmet	Ejected	Other	23	Female	Not requested	Bicyclist	Serious	Ambulance of Min. of health	Public
5	Vehicle no. 1	Driver	M/cycle helmet	Ejected	Other	22	Male	Not requested	Moped driver	Serious	Ambulance of Min. of health	Private
6	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	20	Male	Negative	Saloon car driver	None	None	None
7	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	29	Female	Negative	Saloon car driver	None	None	None
8	Vehicle no. 1	Driver	Uknown	Ejected	Other	43	Male	Not requested	Moped driver	Serious	Ambulance of Min. of health	Public
9	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	19	Female	Negative	Saloon car driver	Minor	Other vehicle	Public
10	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Other	40	Male	Negative	Saloon car driver	None	None	None
11	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	29	Female	Negative	Saloon car driver	None	None	None
12	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	19	Female	Negative	Saloon car driver	None	None	None
13	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	42	Female	Negative	Saloon car driver	None	None	None
14	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	19	Female	Negative	Saloon car driver	None	None	None
15	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	76	Female	Negative	Saloon car driver	None	None	None
16	Vehicle no. 1	Driver	Seatbelt	Was not ejected	Cypriot	19	Male	Negative	Saloon car driver	Serious	Ambulance of Min. of health	Public
17	Vehicle no. 1	Driver	None	Ejected	Cypriot	25	Male	Positive-alcohol	Motorcycle driver	Serious	Ambulance of Min. of health	Public

No.	Vehicle 1											
	Occupant 2											
	Vehicle travelling in	Position in vehicle	Helmet- Seatbelt	Ejected from vehicle	Nationality	Age	Sex	Alcohol and drugs	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1	/	/	/	/	/	/		/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/
8	/	/	/	/	/	/	/	/	/	/	/	/
9	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Cypriot	19	Female	Not requested	Saloon car passenger	None	None	None
10	/	/	/	/	/	/	/	/	/	/	/	/
11	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Cypriot	29	Male	Not requested	Saloon car passenger	None	None	None
12	Vehicle no. 1	Co-driver	Seatbelt	Was not ejected	Cypriot	21	Male	Not requested	Saloon car passenger	None	None	None
13	/	/	/	/	/	/	/	/	/	/	/	/
14	/	/	/	/	/	/	/	/	/	/	/	/
15	/	/	/	/	/	/	/	/	/	/	/	/
16	/	/	/	/	/	/	/	/	/	/	/	/
17	Vehicle no. 1	Passenger	None	Ejected	Cypriot	21	Male	Not requested	Motorcycle passenger	Fatal	Ambulance of Min. of health	Public

No.	Age	Sex	Type of driving licence	Driving licence expiry date	Insurance company	Certificate issue date	Certificate expiry date	Vehicle owner	Address	Vehicle brand	vehicle model	Year of manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
VEHICLE 2 – Driver and Vehicle																	
1	20	Male	Learner	24/06/2006	/	/	/	SAME	SAME	415	NINJA	2005	636	M/Cycle (>=50cc)	/	Yes	Yes
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	69	Female	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4	23	Male	Normal	16/11/2055	ATLANTIC INSURANCE	31/10/2006	31/10/2007	/	/	189	Integra	1997	1790	SALOON Car	Right front wing	Yes	Yes
5	18	Male	Normal	03/05/2059	LAIKI INSURANCE	16/05/2007	29/03/2008	/	/	1089	COOPER 5	2003	1598	SALOON Car	Front	Yes	Yes
6	21	Male	NO	/	/	/	/	/	/	987	/	2003	124	Uknown	Front	Yes	Yes
7	67	Female	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
8	18	Male	Normal	28/06/2059	ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ	/	/	/	/	411	TERRANO	/	/	SALOON Car	Left front eing	Yes	Yes
9	29	Male	Learner	27/03/2008	MINERVA INSURANCE	27/03/2008	27/03/2009	/	/	166	DR650	1997	644	M/Cycle (>=50cc)	Front	Yes	No
10	35	Male	Normal	28/11/2008	MINERVA INSURANCE	12/11/2008	11/03/2009	/	/	1030	EZ100M	2001	1030	M/Cycle (>=50cc)	Right front wing	Yes	Yes
11	26	Male	Learner	11/08/2009	MINERVA INSURANCE	26/01/2009	25/06/2009	SAME	SAME	395	Y2F	1999	998	M/Cycle (>=50cc)	Front	No	No
12	29	Male	Normal	13/10/2050	/	/	/	SAME	SAME	783	RSU1000R	2008	998	M/Cycle (>=50cc)	Left door	Yes	No
13	28	Male	Learner	31/05/2008	MINERVA INSURANCE	02/03/2008	01/03/2009	SAME	SAME	189	X4	1999	1298	M/Cycle (>=50cc)	Front	No	Yes
14	46	Male	Learner	17/03/2009	MINERVA INSURANCE	10/04/2009	09/04/2010	SAME	/	220	DARK	2001	618	M/Cycle (>=50cc)	Right door	Yes	No
15	59	Male	Normal	25/11/2013	LAIKI INSURANCE	24/10/2008	24/10/2009	/	/	1009	AGILITY CIT	2008	125	M/Cycle (>=50cc)	Left door	Yes	No
16	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
17	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

No.	Poisition in vehicle	Helmet- Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Σώμα Ασφαλείας	Drugs and Alcohol	Ιδιότητα ενεχωμένων	Seriousness of injuries	Transport to hospital	Hospital
VEHICLE 2 – Occupant 1												
1	Driver	M/Cycle helmet	Was not ejected	Cypriot	20	Male	/	/	/	None	None	None
2	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	Cypriot	69	Female	/	Not requested	/	Serious	Other vehicle	Private clinic
4	Driver	Seatbelt	Was not ejected	Other	23	Male	/	Not requested	/	None	None	None
5	Driver	None	Was not ejected	Cypriot	18	Male	/	Negative	/	None	None	None
6	Driver	M/Cycle helmet	Ejected	Other	21	Male	/	Negative	/	Serious	Ambulance of Min. of health	Public
7	/	/	/	Cypriot	67	Female	/	Not requested	/	Serious	Ambulance of Min. of health	Public
8	Driver	Seatbelt	Partially ejected	Cypriot	18	Male	Ε.Φ.	Not requested	/	None	None	None
9	Driver	M/Cycle helmet	Ejected	Cypriot	29	Male	/	Negative	/	Serious	Ambulance of Min. of health	Public
10	Driver	M/Cycle helmet	Partially ejected	Other	35	Male	/	Negative	/	Serious	Ambulance of Min. of health	Public
11	Driver	M/Cycle helmet	Partially ejected	Other	26	Male	/	Negative	/	Serious	Ambulance of Min. of health	Public
12	Driver	M/Cycle helmet	Ejected	Cypriot	29	Male	/	Uknown	/	Serious	Ambulance of Min. of health	Public
13	Driver	M/Cycle helmet	Ejected	Cypriot	28	Male	/	Not requested	/	Serious	Ambulance of Min. of health	Public
14	Driver	M/Cycle helmet	Ejected	Cypriot	46	Male	/	Negative	/	Fatal	Ambulance of Min. of health	Public
15	/	/	/	/	/	/	/	/	/	/	/	/
16	/	/	/	/	/	/	/	/	/	/	/	/
17	/	/	/	/	/	/	/	/	/	/	/	/

No.	VEHICLE 2 Occupant 2 Vehicle travelling in	Position in vehicle	Helmet-Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Σώμα Ασφαλείας	Drugs and alcohol	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/
3	Pedestrian	/	/	/	Other	65	Female	/	Not requested	Pedestrian	Serious	Other vehicl	Private clinic
4	/	/	/	/	/	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/
8	Vehicle no. 2	Co-driver	Seatbelt	Was not ejected	Cypriot	18	Male	E.Φ.	Not requested	Saloon car passenger	None	None	None
9	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/
13	/	/	/	/	/	/	/	/	/	/	/	/	/
14	/	/	/	/	/	/	/	/	/	/	/	/	/
15	/	/	/	/	/	/	/	/	/	/	/	/	/
16	/	/	/	/	/	/	/	/	/	/	/	/	/
17	/	/	/	/	/	/	/	/	/	/	/	/	/

No.	VEHICLE 3 Vehicle and driver Age	Sex	Type of driving licence	Date of expiry day of licence	Insurance company	Certificate issue (date)	Certificate expiry date	Car owner	Address	Vehicle brand	Vehicle model	Year of manufacture	HP (cc)	Vehicle type	Damages on first point of impact	Vehicle registration	Fitness certificate
1	27	Male	Normal	02/10/2050	LAIKI INSURANCE	12/02/2007	12/02/2008	Same	Same	3201	15	1993	1991	SALOON Car	Right door	NO	NO
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5	50	Male	Normal	01/08/2027	Commercial Union Insurance	30/09/2007	29/09/2008	/	/	533	LANCER	1991	1468	SALOON Car	Front	YES	YES
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
8	52	Male	Normal	03/02/2022	COSMOS Insurance	17/11/2007	16/11/2008	Same	Same	2411	DICASSIN	1994	2494	Pick up up to 2 tones-single rear tyres	Front left wing	YES	YES
9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
13	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
14	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
16	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
17	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

No.	VEHICLE 3 — Occupant 1: Vehicle travelling in	Position in vehicle	Helmet-Seatbelt	Ejection from vehicle	Nationality	Age	Sex	Drugs and alcohol	Position of people involved in vehicle	Seriousness of injuries	Transport to hospital	Hospital
1	Vehicle no. 3	Driver	Seatbelt	Was not ejected	Cypriot	27	Male	None	Saloon vehicle driver	None	None	None
2	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/
5	Vehicle no. 3	Driver	None	Was not ejected	Cypriot	50	Male	None	Saloon vehicle driver	None	None	None
6	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/
8	Vehicle no. 3	Driver	Seatbelt	Was not ejected	Cypriot	52	Male	Not requested	Pick-up doublecabin dri	None	None	None
9	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/
13	/	/	/	/	/	/	/	/	/	/	/	/
14	/	/	/	/	/	/	/	/	/	/	/	/
15	/	/	/	/	/	/	/	/	/	/	/	/
16	/	/	/	/	/	/	/	/	/	/	/	/
17	/	/	/	/	/	/	/	/	/	/	/	/

No.	Description
1	Motorcyclistis A and B were speed racing Before the intersection motorcyclist A lost control of to motorcycle and hit lightly on the median barriers and got overthrown. Then he hit on the right side of vehicle 3 which was moving on the left lane. Motorcyclist B did not crash with anyone.
2	Vehicle no. 1 lost control of the vehicle to the left side and hit concecutively on a direction sign, traffic light post and two trees.
3	Vehicle A turned into Lordos Vyronos street and hit the two pededestrians
4	On the 4/9/2007 at 12:10 bicycle 1 entered Griva Digeni avenue from Stasinou st. being a bit more on the right side than it should be, and as a result it got hit from the left of vehicle no. 2 driven by the 2ndperson with direction griva digeni avenue
5	Vehicle A entered the junction by tresspassing a red light, and hit the oncoming vehicle B on the right. From the crash driver A ejected and hit vehicle C which was waiting oposite vehicle B.
6	Vehicle A entered the Lordou Vyronos and Griva Digeni junction with red light and as a result it stoped the movement of vehicle B which was moving with green light from Lordos Vyronos st.
7	Vehicle 1 hit the pedestrian who was crossing the road from the left to the right like the vehicle's movement. The pedestrian was held in the hospital
8	Vehicle 1 entered the right lane with a right turn and as a result it crashed with vehicle 2. The the motorcyclist (vehicle 1) was ejected on vehicle C which was waiting still on the right lane.
9	Το όχημα 1 παραβίασε άσπρη συνεχόμενη γραμμή και επιχείρησε να εισέλθει δεξιά στην οδό Στασίνου και συγκρούστηκε με το εξ αντιθέτου ερχόμενο όχημα
10	Motorcycle A entered from Griva digeni with red light moving straight and crashed with Η μοτοσυκκλέττα Α εισήλθη από την Λεωφ. Γρίβα Διγενή στην δασταύρωση με την Λεωφ. Δ. Σεβέρη μvehicle B which was moving straight in Avenue severis. From the crash mototrcyclist B was injured
11	Vehicle A changed lane from left to the right and cut the strainght movement of vehicle B. After the first hit, vehicle B hit on to the median road safety barrier.
12	Vehicle A was moving in Griva Digeni avenue with direction from Honda traffic lights to Milano traffic lights. Under uknown conditions it hit vehicle B which was moving having the same way in the avenue.
13	Vehicle A was moving in Gregory Avxentiou st. and having a left slope iit enteres Griva digeni avenue and as a result it cut the motocycle's way which was already moving in the right lane. As a result they crashed.
14	TVehicle A was moving on the left lane of Griva digeni ave. with direction to Archangelos Michael avenue. On sme point it changed lanes and moving to the right lane it cut the way of motorcycle B which had priority. The motorcyclist died at the hospital.
15	Vehicle A entered the juction with red light whilst moving in Griva Digeni avenue and crashed with motorcycle B which was moving in Kranidioti st. with direction towards 25 Martiou st.
16	Vehicle 1 was moving in Griva Digeni st from Nicosia towards Kykkou traffic lights. At some point it lost contol and crashed on the pedestrian pavement and on electricity post.
17	The motorcycle was moving towards the modde of the city centre having a copassenger. Under uknown conditions the driver lost control of the vehicle and as a result the vehicle moved on the left of the road and landed on the road pavement. Tje co-passenger passed away.

APPENDIX G

DATA COLLECTION FORMS FOR ROAD INSPECTIONS

G.1. STASINOU-SALAMINOS AVENUE

G.2. GRIVA-DIGENI AVENUE

Data Collection form

Road Name	Stasinou salaminos									
Date	23/06/2011									
Time	12:40									
Area	Urban									
Road type	Collector and minor									
Weather	Sunny									
Road side from→to (m)	**0-100**	**100-200**	**200-300**	**300-400**	**400-500**	**500-600**	**600-700**	**700-800**	**800-900**	**900-1km**
No of crashes	4	2	0	1	1	1	0	1	0	2
AADT										
Road Width	14m, 14m, 13.2m, 14m =13.8m	16m, 14m =15m	/m	13.2m	12m	7.5m	/m	13m	/m	3.5m, 14m
Pavement Width	2.8m, 2m, 2.5m, 3m =2.6m	2m, 2.5m =2.25m	/m	2.5m	2.1	2m	/m	2m	/m	2m, 4.7m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
No. of Cars	20	14	25	9	28	9	7	7	45	33
No of H.V.	1	/	/	/	/	/	/	/	/	2
No. of PTVs	1	1	2	2	/	/	/	/	/	/
No. of Motorcyclists	1	1	/	/	3	/	/	1	1	2
No. of Bicyclists	/	/	/	/	/	/	/	/	/	/
No. of Pedestrians	7	1	1	/	4	6	4	/	4	5
Speed limit (km/hr)	50	50	50	50	50	50	50	50	50	50
Drainage per km/100m	1 drain	1 drain	2	/	2	/	/	/	2	1
Longitudinal	Straight road	Left turn	Straight	Straight	Straight	Left turn	Left turn	Straight	Straight	Straight

section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges(High, Average, Low)										
Section -narrow	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Road safety barriers (Space for turns/ edges?)	Pedestrian Railings	Pedestrian Railings	Pedestrian Railings	Pedestrian railings	Pedestrian railings	No	No	No	Pedestrian barriers	No
Median barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No	No	No
Aggressive obstacles	No	No	No	No	No	No	No	No	No	No
Rumble strips	/	/	/	/	/	No	No	No	No	No
Embankments/Cuts	/	/	/	/	/	No	No	No	No	No
Hatching	Yes	No	Yes	No	No	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Road markings	No	Yes turn left or go straight on the road	Yes central reserve box	No	Yes turn left, go straight	Yes turn right, go straight	No	Yes	Yes	Yes
Bicycle lane	/	/	No	No	No	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	/	/	No	No	No	No	No	No	No	No
Bus lanes	/	No	No	No	No	No	No	No	No	No
Bus lay-bys	No	No	No	No	No	No	No	No	No	No
Bus stop	No	No	Yes	No	No	Yes	No	No	Yes	No

Crash cushions	No	No	No	No	No	No	No	No	No	No
Speed cameras	Speed camera check sign	/	No	No	No	No	No	No	No	No
Bollards	/	/	No	No	No	Yes	Yes	Yes	Yes	Yes
Pedestrian barriers	Yes	Yes	Yes	Yes	Yes	Bollards	Bollards	Bollards	Yes	Yes
High kerb	Yes	Yes	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vertical realignment	So-so	Good	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Turn	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes but on pavement	Yes but on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes in pavement	Yes on pavement	Yes on pavement	Yes on pavement
Central hatching	No	No	/	No	No	No	No	Not	No	No
Cats eyes	Yes	Yes	No	Yes	No	No	No	No	No	No
Delineation	Not clear	Not clear	Not clear	Not clear	Not clear	Good	Not clear	Not clear	Not clear	Not clear
Shoulder sealing	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	o.3m
Pedestrian crossing	Yes with traffic lights	No	Yes with traffic lights	No	Yes with traffic lights	No	No	No	No	Yes with traffic lights
Traffic Lights	Yes	No	Yes	No	Yes	No	No	No	No	Yes
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning Signs	Bend to left	Traffic signals	Pedestrians in road ahead	Traffic signals	Bend to left	Bend to left	No	No	Traffic signals	Bend to left Traffic signals
Direction Signs	Yes	No	Yes	No	No right turn	No right turn (x2)	No	No	/	/
Information Signs	Area in which cameras are	No	Parking sign	No	/	Area in which	No	No	Bus stop	/

	used to control traffic regulations					cameras are used to control traffic regulations				
Secondary roads on same lane	1	Not any	1	Not any	1	Not any	No	No	Yes	Yes
Signalised	Yes		No		Yes				No	Yes
Visibility	Good		Clear		Clear				Not good	Good
Stop sign	Traffic lights		Yes		Traffic lights				Yes	Traffic lights
Do HV require more than one lane to enter the road?	No	No	No						No	No
Secondary roads on opposite lane	1 Parking	2	2	2	3	2	2	2	1	1
Visibility	Clear	1st-Not clear because of trees or parked cars 2nd-clear Parking	1st-not clear 2nd-clear	1st-clear 2nd-not clear	1st- clear 2nd&3rd-not clear	Not clear	Not clear	Not clear	Not clear	Clear

Road Name	Stasinou - Salaminos						
Date	23/06/2011						
Time	12:50						
Weather	Sunny						
Area	Urban						
Road type	Collector and minor						
Road side from→to (m)	**1000-1100**	**1100- 1200**	**1200- 1300**	**1300- 1400**	**1400- 1500**	**1500- 1600**	**1600- 1700**	**1700- 1780**
No of crashes	**0**	**2**	**1**	**0**	**1**	**2**	**0**	**0**
AADT								
Road Width	/m	15.4m, 15.2m	7.5m	/m	14.2m	12.4m, 14m	/m	/m
Pedestrian pavement width	/m	1.4m, 2.8m	3m	/m	2.5m	2m, 2m	/m	/m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good
No. of cars	33	17	4	5	2	2	1	4
No. of Pedestrians	2	2	2	/	1	4	/	4
No. of Bicyclists	/	/	/	1	/	/	/	/
No. of Motorcyclists	/	1	1	1	/	/	1	/
No. of H.V.	2	/	/	/	/	1	/	/
No. of PTVs	2	2	/	/	/	/	/	/
Speed limit (km/hr)	50	50	50	50	50	50	50	50
Drainage per km/100m	1	1	1	1	/	1	2	2
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges	Left turn	Left turn	Straight	Right turn	Right turn	Straight	Left turn	Straight
Section -narrow	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Road safety barriers (Space	No	No	No	No	No	No	No	No

for turns/ edges?)								
Median barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No
Aggressive obstacles	No	No	No	No	No	No	No	No
Rumble strips	No	No	No	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No	No	No	No
Hatching	No	No	No	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good	Good	Good	Good	Good	Good	Good	Good
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning Signs	No	No	Traffic signals	No	Bend to left	No	Traffic signals	No
Direction Signs	No	No	/	Yes	No	No	No	Yes
Information Signs	Area in which cameras are used to control traffic regulations	No	Bus stop	No	Area in which cameras are used to control traffic regulations	No	No	No
Regulatory signs	One way No turn right	No	No	No	No	No	No	No
Road markings	No	Yes- road signs	Yes- road signs	Yes- road signs	No	Yes- Road signs	Yes- road signs	Yes- road signs
Bicycle lane	NO	NO	NO	NO	NO	NO	NO	NO
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No	No	No	No
Bus stop	No	No	Yes	No	No	No	No	No
Bus lanes	No	No	No	No	No	No	No	No

Bus lay-bys	No	No	No	No	No	No	No	No
Crash cushions	No	No	No	No	No	No	No	No
Speed cameras	No	No	No	No	No	No	No	No
Bollards	No	No	Yes	Yes	No	No	No	Yes
Pedestrian barriers	No	No	No	No- Bollards	No	No	No	No- Bollards
High kerb	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vertical realignment	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement	Yes on pavement
Central hatching	No	No	No	No	No	No	No	No
Shoulder sealing	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m
Delineation	Not clear	Clear	Clear	Not clear	Not clear	Clear	Clear	Not Clear
Pedestrian crossing	Yes on traffic lights	No	No	Yes on traffic lights	No	No	No	Yes on traffic lights
Secondary roads	2	/	/	/	/	/	/	1
Signalised	Yes							Traffic signals
Visibility	Good							
Stop sign	Yes							
Do HV require more than one lane to enter the road	No							
Secondary roads- opposite lanes	Yes	1-one way	2	1- signalised	1	2	1	1
Clear	Yes traffic lights	Yes	1st-petrol station 2nd-clear	Yes	Yes	1stPetrolstop not clear 2nd clear	Yes	Yes

Road Name	Salaminos-Stasinou									
Date	23/06/2011									
Time	13:05									
Area	Urban									
Road type	Collector and minor									
Weather	Sunny									
Road side from→to (m)	**1780-1700**	**1700-1600**	**1600-1500**	**1500-1400**	**1400-1300**	**1300-1200**	**1200-1100**	**1100-1000**	**1000-900**	**900-800**
No of crashes	0	0	2	1	0	1	2	0	2	0
AADT										
Road Width	/m	/m	14.2m, 14m	14.2m	/m	7.5m	15.4m, 15.2m	/m	2m, 4.7m	/m
Pavement Width	/m	/m	2m,2m	2.5m	/m	3m	1.4m,2.8m	/m	2m,4.7m	/m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
No. of Cars	18	5	4	25	12	6	8	14	21	6
No of H.V.	/	/	/	/	/	/	/	2	3	/
No. of PTVs	/	/	/	/	1	/	/	/	/	/
No. of Motorcyclists	2	/	1	1	/	/	2	5	7	2
No. of Bicyclists	/	/	/	1	/	/	1	3	2	/
No. of Pedestrians	1	1	1	/	/	/	2	5	7	2
Speed limit (km/hr)	50	50	50	50	50	50	50	50	50	50
Drainage per km/100m	1	2	1	1	1	2	2	3	3	2
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges	Straight	Right turn	Right turn	Left turn	Left turn	Straight	Right turn	Straight	Straight	Straight

Section-narrow/wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Road safety barriers (Space for turns/ edges?)	No-bollards	No	No-bollards	No-bollards	No	No	No	No	No-bollards	No
Median barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No	No	No
Aggressive obstacles	No	No	No	No	No	No	No	No	No	No
Rumble strips	No	No	No	No	No	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No	No	No	No	No	No
Hatching	No	No	No	No	No	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Road markings	Yes-road signs	Yes- road signs	No	Yes- road signs	No	No	No	No	Yes- road signs	Yes- road signs
Bicycle lane	No	No	No	No	No	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No	No	No	No	No	No
Bus lanes	No	No	No	No	No	No	No	No	No	No
Bus lay-bys	No	No	No	No	No	No	No	No	No	No
Bus stop	No	Yes	No	No	No	No	Yes	No	No	Yes
Crash cushions	No	No	No	No	No	No	No	No	No	No
Speed cameras	No	No	No	No	No	No	No	No	No	No
Bollards	Yes	No	Yes	Yes	No	No	No	No	Yes	No
Pedestrian barriers	No	No	No	No	No	No	No	No	No	No
High kerb	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Vertical realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement	Yes- on pavement
Central hatching	No	No	No	No	No	No	No	No	No	No
Cats eyes	No	No	No	No	No	No	No	No	No	No
Delineation	Good	Not clear	Not clear	Not clear	Not clear	Not clear	Not clear	Good	Not clear	Good
Shoulder sealing	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m
Pedestrian crossing	Yes on traffic lights	No	No	No	Yes on traffic lights	No	No	No	Yes on traffic lights	No
Traffic Lights	Yes	No	No	No	Yes	No	No	Yes	Yes	No
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning Signs	Bend to right	No	Traffic signals	No	No	Bend to right	Traffic signals	No	Traffic signals	No
Direction Signs	No	No	No	No	No	No	No	No	No	No
Information Signs	No	Bus stop Area in which cameras are used to control traffic regulations	No	No	Area in which cameras are used to control traffic regulations	No	Bus stop	No	No	Bus stop Area in which cameras are used to control traffic regulations
Signs giving order	No	No turn left	No	No	No	No	No	No turn right	No	No
Secondary roads on	2	2	2	2	1-traffic	/	2	1	1- traffic	2

same lane	1st-petrol station 2nd ok	1st ok 2nd petrol station			lights				signals	
Signalised	No	No	No	Yes	Yes	/	No	No	Yes	No
Visibility	Good	Good	Good	Good	Good		Good	Good	Good	Good
Stop sign	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Do HV require more than one lane to enter the road?	No	No	No	NO	No	/	No	No	No	No
Secondary roads on opposite lane	/	/	/	/	/	/	/	1	1	1
Visibility	/	/	/	/	/	/	/	Good-Traffic signals	Good-Traffic signals	Good

Road Name	Salaminos- Stasinou							
Date	23/06/2011							
Time	13:15							
Weather	Sunny							
Area	Urban							
Road type	Collector and minor							
Road side from→to (m)	**1000-1100**	**1100- 1200**	**1200- 1300**	**1300- 1400**	**1400- 1500**	**1500- 1600**	**1600- 1700**	**1700- 1780**
No of crashes	1	0	1	1	1	0	2	4
AADT								
Road Width	13m	/	7.5m	12m	13.2m	/m	15m	13.8m
Pedestrian pavement width	2m	1m	2m	2.1m	2.5m	/m	2.25m	2.6m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good
No. of cars	9	5	16	17	4	8	14	15
No. of Pedestrians	2	/	/	2	2	2	5	11
No. of Bicyclists	/	/	/	3	1	1	2	2
No. of Motorcyclists	1	1	/	5	3	1	2	3
No. of H.V.	/	/	/	4	/	/	/	/
No. of PTVs	/	/	/	1	1	/	/	1
Speed limit (km/hr)	50	50	50	50	50	50	50	50
Drainage per km/100m	0	1	3	2	2	2	3	2
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges	Straight	Right turn	Right turn	Left turn	Left turn	Straight	Right turn	Straight
Section –narrow, wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide	Wide
Road safety barriers	No	No	No	No	No- railings	No	No	No railings

(Space for turns/ edges?)							chevrons	
Median barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No
Aggressive obstacles	No	No	No	No	No	No	No	No
Rumble strips	No	No	No	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No	No	No	No
Hatching	No	No	No	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good	Good	Good	Good	Good	Good	Good	Good
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning Signs	Bend to right x2	No	Traffic signals	No	Traffic signals x2	Bend to right x 2	Central reservation ahead	No
Direction Signs	No	No	Yes	No	No	No	No	No
Information Signs	No	No	Parking Bus	No	Area in which cameras are used to control traffic regulations	Bus	Bus	No
Regulatory signs	No	No	No turn left x2	No	No	No	No	No turn right
Road markings	Yes-road signs	Yes-road signs	No	No	No	Yes- road signs	Yes-road signs	Yes- road signs
Bicycle lane	NO	NO	NO	NO	NO	NO	NO	NO
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High kerb	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No	No	No	No

Bus stop	No	No	Yes	No	No	Yes	Yes	No
Bus lanes	No	No	No	No	No	No	No	No
Bus lay-bys	No	No	No	No	No	No	No	No
Cats eyes	No	No	No	No	No	Yes	Yes	Yes
Crash cushions	No	No	No	No	No	No	No	No
Speed cameras	No	No	No	No	No	No	No	No
Bollards	No	No	No	No	No	No	No	No
Pedestrian barriers	No	No	No	No	Yes	No	No	Yes
Vertical realignment	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes-on pavement	Yes-on pavement	Yes-on pavement	Yes-on pavement	Yes-on pavement	Yes-on pavement	Yes-on pavement	Yes-on pavement
Central hatching	No	No	No	No	No	No	No	No
Shoulder sealing	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m	0.3m
Delineation	Good	Good	Good	Not clear	Good	Good	Good	Good
Pedestrian crossing	No	No	No	Yes	Yes-on traffic lights	Yes-with signal	No	Yes-on traffic lights
Secondary roads	3	2	2	2	1	1	1	1
Signalised	No	No	No	1ST No 2ND Yes	No	No	No	Yes
Visibility	Not very clear	1st clear 2nd nt clear	1st not clear 2nd-clear	1st no 2nd yes	Good	Good	Good	Good
Stop sign	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do HV require more than one lane to enter the road	No	No	No	No	No	No	No	No
Secondary roads- opposite lanes	No	No	No	1-Signalised	No	No	No	No
Clear	/	/	/	Yes	/	/	/	/

Data Collection form

Road Name	Leoforos Georgiou Griva Digeni (Roundabout→Starbucks)									
Date	23/06/2011									
Time	13:30									
Area	Urban									
Road type	Collector and minor									
Weather	Sunny									
Road side from→to	**0-100**	**100-200**	**200-300**	**300-400**	**400-500**	**500-600**	**600-700**	**700-800**	**800-900**	**900-1km**
Number of crashes	0	0	1	0	0	0	0	0	1	0
AADT										
Road Width	/m	/m	13m	/m	/m	/m	/m	/m	5.9m	/m
Pavement Width	/m	/m	2m	/m	/m	/m	/m	/m	2m	/m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
No of Cars	2	2	4	11	5	1	0	14	3	3
No. of Pedestrians	0	0	2	0	0	0	0	2	0	1
No. of Bicyclists	0	0	0	0	0	0	0	0	0	0
No. of Motorcyclists	0	0	1	0	0	1	1	2	0	0
No. of PTVs	0	0		0	0	0	0	0	0	0
No. of HVs	0	0	0	1	0	0	0	1	0	0
Speed limit every 100m or every 1 km	50	50	50	50	50	50	50	50	50	50
Drainage per km/100m	3	2	2	3	4	2	3	2	1	1
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with	Straight then left	Slight left turn	Slight left turn	Sight left turn	Slight left turn	Slight left turn	Slight left turn	Slight left turn	Straight	Straight

emergency braking ranges										
Section-narrow/wide	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Road safety barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No	No	No
Median barriers (Space for turns/ edges?)	Median semi flexible barriers- no	Median semi-flexible barriers- no	Median semi-flexible barriers- Yes on traffic lights- not safe at edges	Median semi-flexible barriers- No	Median semi-flexible barriers- No	Median semi-flexible barriers- No	Median semi-flexible barriers No	Median semi-flexible barriers- Yes space on traffic lights, not safe at edges	Median semi-flexible barriers- No	Median semi-flexible barriers- No
Aggressive obstacles	No	No	No	No	No	No	No	No	No	No
Rumble strips	No	No	No	No	No	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No	Yes after ped. pavement	Yes after ped. pavement	Yes after pavement	No	No
Hatching	No	No	No	No	No	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good- energy absorbing	Good, energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good
Road markings	No	Yes- road signs	Yes- road signs	No	Yes-road signs	No	Yes- road signs	Yes- road signs	No	Yes- road signs
Bicycle lane	No	No	No	No	No	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No	No	No	No	No	No

Bus stop	No	No	No	No	No	No	No	Yes	No	No
Bus lanes	No	No	No	No	No	No	No	No	No	No
Bus lay-bys	No	No	No	No	No	No	No	No	No	No
Crash cushions	No	No	No	No	No	No	No	No	No	No
Speed cameras	No	NO	No	No	No	No	No	No	No	No
Bollards	No	No	No	No	No	No	No	No	No	No
Pedestrian barriers	No	No	No	No	No	No	No	No	No	No
Pedestrian pavement	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes
High kerb	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vertical realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes after pedestrian pavement – at 2m from road pavement	Yes-2m from road	Yes- 2m from road	Yes- 2m from road	Yes- 2m from road	Yes- 2m from the road	Yes after cut	Yes after cut	Yes- 2m from road	Yes at-3m
Central hatching	No	No	No	No	No	No	No	No	No	No
Cat's eyes	No	No	No	No	No	No	No	No	No	No
Delineation	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Shoulder sealing	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m
Pedestrian crossing	No	No	Yes-on traffic lights	No	No	No	No	Yes-on traffic lights	No	No
Traffic lights	No	No	Yes	No	No	No	No	Yes	No	No
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning signs	No	Mind the cyclists Traffic	No	No	No	No	Traffic signals	No	No	No

		signals								
Direction signs	Yes	No	No	No	No	No	No	No	No	No
Information signs	Area in which cameras are used to control traffic regulations	No	No	No	No	Area in which cameras are used to control traffic regulations	No	Bus stop	No	No
Signs giving orders	Speed limit- 50	No	Keep left	No	No	Speed limit- 50	No	Keep left	No	No
Secondary roads	1	No	No	1	1	No	No	1	No	1
Signalised	No			No	No			Yes		No
Visibility	Good			Good	Not good from corner			Good		Good
Stop sign	Yes			Yes	Yes			Yes		Yes
Do HV require more than one lane to enter the road?	No			No	No			No		Yes
Secondary roads on opposite lane	No	No	1- signalised	No	No	No	No	1- signalised	No	No
Visibility	/		Good					Good		

Road Name	Leoforos Georgiou Griva Digeni				
Date	23/06/2011				
Time					
Area	Urban				
Road type	Collector and minor				
Weather	Sunny				
Road side from→to	**1000-2000**	**2000-3000**	**3000-4000**	**4000-4100**	**4100-4200**
Number of crashes	5	5	5	0	0
AADT					
Road Width	14m, 7m, 6m, 5.9m, 5.9m	6.1m, 2m, 6.4m, 12.5m, 14m	6.8m,8.6m,8.2m, 17.4m, 6.7m	/m	/m
Pavement Width	2m, 2m, 1.8m, 2m, 2m	3.3m,0.2m,1.6m, 2.4m, 1.8m	2m, 2m, 2.2m, 2m, 2.5m	/m	/m
Visibility conditions	Good	Good	Good	Good	Good
No of Cars	42	101	77	5	15
No. of Pedestrians	8	5	13	0	0
No. of Bicyclists	3	1	4	0	0
No. of Motorcyclists	5	9	7	2	4
No. of PTVs	1	3	1	0	0
No. of HVs	3	3	5	1	0
Speed limit every 100m or every 1 km	50	50	50	50	50
Drainage per km/100m	7	17	16	3	3
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges	Straight Slight right turn Straight Slight right turn	Straight Left turn	Straight Slight left turn Straight	Straight	Straight

Section-narrow/wide	OK	OK	OK	OK	OK
Road safety barriers (Space for turns/ edges?)	No	No	No	No	No
Median barriers (Space for turns/ edges?)	Yes median semi-flexible barriers, Yes space at turns Not protected at edges	No- median kerb instead, high kerb	First 150m nothing Yes, semi-flexible barriers at 3900m, No space for turns High Median kerb with space for turns at traffic lights	Yes semi flexible barriers	Yes semi flexible barriers
Aggressive obstacles	No	No	No	No	No
Rumble strips	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No
Hatching	No	Yes- edge at some point	No	No	No
Roadway conditions	Good	Good	Good	Good	Good
Lighting conditions	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing
Road markings	Yes rd signs x 2	Yes road signs	Yes rd signs x 6	No	Yes
Bicycle lane	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No
Bus stop	Yes x 3	Yes x 1	Yes x 3	Yes	No
Bus lanes	No	No	No	No	No
Bus lay-bys	No	No	Yes the 2nd one	Yes	No
Crash cushions	No	No	No	No	No
Speed cameras	No	No	Yes x 1	No	Yes
Bollards	No	No	No	No	Yes

Pedestrian barriers	No	No	Pedestrian railings at 1 ped crossing	Pedestrian railing on ped crossing	Pedestrian railing
High kerb	Yes	Yes	Yes	Yes	Yes
Vertical realignment	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good
Trees	Yes after the ped. pavement	Yes on the pavement	Yes on pavement	Yes on pavement	No
Central hatching	No	Yes- 3-4m long	No	No	No- central reserved box
Cat's eyes	No	Yes	No	No	No
Delineation	Good	Good	Good	Good	Good
Shoulder sealing	0.2m	0.2m	0.2m	0.2m	0.2m
Pedestrian crossing	Yes x 2- both signalised	Yes- signalised Yes-under bridge	Yes- signalised x 6- with traffic lights	Yes signalised	Yes signalised
Traffic lights	Yes	Yes	Yes x 3	Yes- for ped crossing	Yes
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes
Warning signs	Traffic signals	Traffic signals Junction ahead Pedestrian crossing	Traffic signals x3 Mind the cyclists	No	Traffic signals
Direction signs	Yes	No	Yes 2	Yesx2	Yes 1
Information signs	Bus stop x 3 Area in which cameras are used to control traffic regulations	Bus stop	Bus stop x3 Area in which cameras are used to control traffic regulations	Bus stop	Central reserved box ahead

Signs giving orders	Keep left or right x 2	Keep left or right x 2 Keep left Speed limit 50 One way road	Keep left x 3 Speed limit x 2	No	No
Secondary roads	4	3	6	No	Yes- signalised
Signalised	1st-signalised 2nd-Not 3rd-Not 4th-Not	1st signalised 2nd- Not 3rd- Not	1st- signalised 2nd- signalised 3rd- Not 4th-Signalised 5th- Not 6th- Not		Yes
Visibility	1st- clear 2nd- not very clear 3rd- clear 4th- clear	1st- clear 2nd- clear- on bend 3rd- clear	All clear		Clear
Stop sign	All yes	All yes	All yes		Yes
Do HV require more than one lane to enter the road?	All No	All no	All no	No	No
Secondary roads on opposite lane	1- traffic signal	1- traffic signal	3-traffic signal		Yes- signalised
Visibility	Clear	Clear	Clear		Clear

Road Name	Leoforos Georgiou Griva Digeni								
Date	23/06/2011									
Time	14:00									
Area	Urban									
Road type	Collector and minor									
Weather	Sunny- 39°C									
Road side from→to	**4200-4100**	**4100-4000**	**4000-3000**	**3000-2000**	**2000-1000**	**1000-900**	**900-800**	**800-700**	**700-600**	**600-500**
Number of crashes	0	0	5	5	5	0	1	0	0	0
AADT										
Road Width	/m	/m	6.8m,8.6m, 8.2m, 17.4m, 6.7m	6.1m, 2m, 6.4m, 12.5m, 14m	14m, 7m, 6m, 5.9m, 5.9m	/m	5.9m	/m	/m	/m
Pavement Width	/m	/m	2m, 2m, 2.2m, 2m, 2.5m	3.3m,0.2m ,1.6m, 2.4m, 1.8m	2m, 2m, 1.8m, 2m, 2m	/m	2m	/m	/m	/m
Visibility conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
No of Cars	28	12	80	62	37	1	6	12	5	6
No. of Pedestrians	2	4	3	3	2	0	1	1	0	0
No. of Bicyclists	0	0	2	0	0	0	0	0	0	0
No. of Motorcyclists	4	4	7	3	0	0	0	1	0	0
No. of PTVs	0	0	1	0	0	0	0	0	0	0
No. of HVs	1	4	7	2	3	0	0	0	0	0
Speed limit every 100m or every 1 km	50	50	50	50	50	50	50	50	50	50
Drainage per km/100m	?	?	?	?	23	2	2	3	1	2
Longitudinal	Straight	Straight	Straight	Right turn	Straight	Straight	Straight	Straight	Slight	Slight

section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges			Bit turn to the left	Straight	Right turn				right turn	right turn
Section-narrow/wide	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Road safety barriers (Space for turns/ edges?)	No	No	No	No	No	No	No	No	No	No
Median barriers (Space for turns/ edges?)	No- High median kerb	No- High median kerb	Yes median semi flexible safety barriers for the first 200m	No- high median kerb	Yes- 1st 400m high median kerb Then semi-flexible road safety barriers	Semi-flexible median road safety barriers	Semi-flexible median road safety barriers	Semi-flexible median road safety barriers	Semi-flexible median road safety barriers	Semi-flexible median road safety barriers
Aggressive obstacles	No	No	No	No	No	No	No	No	No	No
Rumble strips	No	No	No	No	No	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No	No	No	No	No	No
Hatching	No	No	No	Yes on middle of the road fro 10m Yes on edge of road before traffic	No	No	No	No	No	No

				lights for 20m						
Roadway conditions	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Lighting conditions	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing
Road markings	Yes x 1- central reserved box	No	Yes- direction signs x 7	Yes - dorections igns x 4	Yes- direction signsx 2	Yes- direction signs	Yes- directio n signs	Yes- directio n signs	Yes- directio n signs x 2	No
Bicycle lane	No	No	No	No	No	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No	No	No	No	No	No
Bus stop	Yes	No	Yes x 1	Yes x 1	Yes x 2	Yes x1	No	No	Yes x 1	No
Bus lanes	No	No	No	No	No	No	No	No	No	No
Bus lay-bys	No	No	Yes	No	1 vehicle lay- by	No	No	No	No	No
Crash cushions	No	No	No	No	No	No	No	No	No	No
Speed cameras	No	No	Yes x 1	No	No	No	No	No	No	No
Bollards	No	No	No	No	No	No	No	No	No	No
Pedestrian pavement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian barriers	No	Yes- railings on ped. crossing	Yes- railings on ped crossing	No	No	No	No	No	No	No
High kerb	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vertical realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Trees	Yes- small	No	Yes on ped	Yes on	Yes on	Yes after	Yes	Yes	Yes	Yes after

	on ped pavement		pavement	ped pavement	pavement Wooden electricity poles at 4m from road edge	road pavement	after road paveme nt	after road paveme nt	after road paveme nt	road pavemen t
Central hatching	No	No	No	Yes for 10 m	No	No	No	No	No	No
Cat's eyes	No	No	No	No	No	No	No	No	No	No
Delineation	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Shoulder sealing	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m	0.2m
Pedestrian crossing	Yes-signalised	Yes-signalised	Yes signalised x 6	Yes 1 signalised	Yes x 2 signalised	No	No	Yes-signalise d	No	No
Traffic lights	Yes	Yes- ped crossing	Yes x 4	Yes 1	Yes x 2	No	No	Yes x 1	No	No
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Warning signs	No	Traffic signals	Traffic signals x 3 Junction to the right	Traffic signals x 2 Junction on bend ahead	Traffic signals x 2	No	Traffic signals x1	Traffic signals x 1	No	No
Direction signs	No	No	Yes x 2	Yes x 1	No	No	No	No	Yes x 1	Yes x 1
Information signs	No	No	Bus stop x 1 Area in which cameras are used to control	Bus stop x1	Bus stop x 2 Area in which cameras are used to	Bus stop x 1	No	No	Bus stop x1	No

			traffic regulations		control traffic regulations					
Signs giving orders	No	No	Do not turn left Keep to the left x3 Speed limit 50 x 2	Do not turn right Keep to the left x 4 Keep to the rightx2	Keep left Keep right Speed limit 50km/hr	No	Speed limit 50 km/hr	Keep left	No	No
Secondary roads	1st - petrol station	1st - petrol station	1st - petrol station 2nd - not signalised 3rd-signalised 4th - not signalised 5th-signalised 6th-not signalised 7th-signalised	1- not signalised 2nd signalised	1	No	1	No	Yes- not signalise d	No
Signalised	No	No	Some	one	signalised		No		No	
Visibility	Good	Good	Good	Good	Good		Good		Good	
Stop sign	Yes	Yes	Yes	Yes	Yes		Yes		Yes	
Do HV require more than one lane to enter the road?	No	No	No	No	No		No		No	No
Secondary roads on opposite lane	1-traffic lights	No	3- traffic lights	1-not signalised 2singal	1-signalised		No	Yes-signalise d	No	
Visibility	Good		Good	Good	Good			Good		

Road Name	Leoforos Georgiou Griva Digeni				
Date	23/06/2011				
Time					
Area	Urban				
Road type	Collector and minor				
Weather	Sunny				
Road side from→to	**500-400**	**400-300**	**300-200**	**200-100**	**100-0**
Number of crashes	0	0	1	0	0
AADT					
Road Width	/m	/m	13m	/m	/m
Pavement Width	/m	/m	2m	/m	/m
Visibility conditions	Good	Good	Good	Good	Good
No of Cars	0	6	2	3	0
No. of Pedestrians	0	0	0	2	1
No. of Bicyclists	0	0	0	0	0
No. of Motorcyclists	0	0	0	0	0
No. of PTVs	0	0	1	0	0
No. of HVs	0	1	0	0	1
Speed limit every 100m or every 1 km	50	50	50	50	50
Drainage per km/100m	0	1	2	1	1
Longitudinal section: Longer ranges with stronger gradient ratio, in contrast with emergency braking ranges	Slight right turn	Slight right turn	Slight right turn	Slight right turn	Sight right turn

Section-narrow/wide	Ok	Ok	Ok	Ok	Ok
Road safety barriers (Space for turns/ edges?)	No	No	No	No	No
Median barriers (Space for turns/ edges?)	Semi-flexible median road safety barriers, Space for turns, Not very safe at edges just bended	Semi-flexible median road safety barriers, Space for turns, Not very safe at edges just bended	Semi-flexible median road safety barriers, Space for turns, Not very safe at edges just bended	Semi-flexible median road safety barriers, Space for turns, Not very safe at edges just bended	Semi-flexible median road safety barriers, Space for turns, Not very safe at edges just bended
Aggressive obstacles	No	No	No	No	No
Rumble strips	No	No	No	No	No
Embankments/Cuts	No	No	No	No	No
Hatching	No	No	No	No	No
Roadway conditions	Good	Good	Good	Good	Good
Lighting conditions	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing	Good- energy absorbing
Road markings	No	Yes road signs	No	No	No
Bicycle lane	No	No	No	No	No
Paved shoulder	Yes	Yes	Yes	Yes	Yes
Bicycle path	No	No	No	No	No
Bus stop	Yes	No	Yes	No	No
Bus lanes	No	No	No	No	No
Bus lay-bys	No	No	No	No	No
Crash cushions	No	No	No	No	No
Speed cameras	No	No	No	No	No
Bollards	No	No	No	No	No
Pedestrian barriers	No	No	No	No	No

Pedestrian pavements	Yes	Yes	No	No	No
High kerb	Yes	Yes	Yes	Yes	Yes
Vertical realignment	Good	Good	Good	Good	Good
Horizontal realignment	Good	Good	Good	Good	Good
Trees	Yes after ped. pavement	Yes after ped. pavement	Yes at 1m	Yes at 1m	Yes at 1m
Central hatching	No	No	No	No	No
Cat's eyes	No	No	No	No	No
Delineation	Clear	Clear	Clear	Clear	Clear
Shoulder sealing	0.2m	0.2m	0.2m	0.2m	0.2m
Pedestrian crossing	No	Yes	No	No	No
Traffic lights	No	Yes	No	No	No-Roundabout
Double yellow line at edge	Yes	Yes	Yes	Yes	Yes
Warning signs	Traffic signals	Pedestrian crossing	No	Roundabout	No
Direction signs	No	Yes x 1	No	No	No
Information signs	Bus x 1	No	Bus x 1	No	No
Signs giving orders	No	Keep right	No	No	Keep right Roundabout (roundabout circulation - give way to vehicles from the immediate right)
Secondary roads	No	Yes	No	No	Yes

Signalised		Yes			Roundabout
Visibility		Good			Good
Stop sign		Yes			Yes
Do HV require more than one lane to enter the road?		No			No
Secondary roads on opposite lane	No	No	No	No	Yes roundabout
Visibility					Good